

## Paul Nelson

3D Character Artist

## Gallery

Gallery - 10 of the best images from around the world!

## Baby Satyr

Project Overview  
by Nikita Veprikov

# REPAIR DROID

In this month's edition of our Building Droids series, **Victoria Passariello** takes a concept image and turns it into this stunning render of a Repair Droid.

## The Submarine Pen

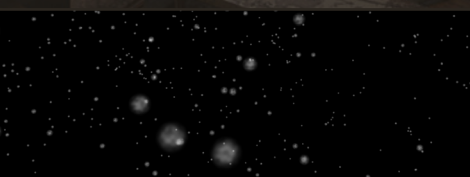
Kicking off this brand new series, **Andrew Finch** shows us how to model a games level from start to finish. Here he concentrates on the concept.

## Guide to FX - Particles & Dynamics

Brr! It's going to get a bit cold as **Matt Chandler** (3dsmax) and **Mike Zugschwert** (Maya) show us how to create and animate snow.

## Character Production

In the latest part of this series, **Rodrigue Pralier** (3dsmax) and **Anto Juricic** (Maya) show us how to texture our character.





## EDITORIAL

Welcome to the July issue of 3DCreative! This month we continue some of our great tutorials, as well as starting an exciting new one. With this selection of inspiring tutorials, a fascinating interview, and another skillful Making Of, you won't know where to start.

Let's kick things off with the brilliant cover image, which is part of our building droids series. We provided **Victoria Passariello** with a 2D concept and technical drawings and she shows us how to build an accurate 3D model of her very useful repair droid.

Continuing our tutorial series covering FX, Particles and Dynamics, **Matt Chandler** and **Mike Zugschwert** demonstrate how to create an atmospheric snowfall. With Matt working in 3ds Max, he shows us how to achieve this by using particle flow and a number of standard space warp modifiers, whilst Mike shows us how simple making snow can be with Maya particles, by demonstrating the use of nParticles with a volume axis field and a 3D fluid container.

As we progress further into our character production series, which focuses on the modeling of an old man's head, things are really being to take shape. So far our talented artists have covered concept creation, detailing and all the necessary preparations for texturing and shading. This time around **Rodrigue Pralier** and **Anto Juricic** move on to the actual texturing and shading, and look at using Displacement maps and photographic referencing to create realistic skin, Rodrigue using 3ds Max and Anto using Maya.

Our armored beasts series sadly came to a close last month, but do not fear, we have replaced the void with an exciting new series on creating a submarine interior level for the Unreal Games Engine! **Andrew Finch** will guide us through this series using programs such as 3ds Max, Photoshop and UDK, and in chapter one he starts by looking at concept sketches, before moving on to building a "white box" version of the level.

We also bring you an interview with talented character artist **Paul Nelson**, who has a career in the industry that spans over 10 years. Paul talks to us about the leading titles he has worked on, his route into 3D, and approach to character modeling.

As always, it doesn't end there! We have a mystical Making Of by the imaginative **Nikita Veprikov** and the latest gallery selection

## CONTENTS

What's in this month?

## PAUL NELSON

Interview - 3D Character Artist

## THE GALLERY

10 of the Best 3D Artworks

## FX PARTICLES &amp; DYNAMICS

3ds Max & Maya - Chapter 4: Snow

## BUILDING DROIDS

Chapter 4: Repair Droid

## THE SUBMARINE BOX

Chapter 1: Concept to White Box

## CHARACTER PRODUCTION

3ds Max & Maya - Chapter 4: Texturing and Shading

## "BABY SATYR"

Project Overview by Nikita Veprikov

## FREE CHAPTER

Digital Art Masters: Volume 6 - Titouan Olive

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EDITOR	LAYOUT	CONTENT	PROOFING
Simon Morse	Matthew Lewis	Simon Morse	Jo Hargreaves
	Layla Khani	Richard Tilbury	
LEAD DESIGNER		Jessica Serjent-Tipping	MARKETING
Chris Perrins	Az Pishneshin		Tom Greenway

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containing some of the best current 3D artwork in the community, including pieces from talented artists such as **Kris Kelly**, **Vlad Konstantinov** and **Rafael S. Benedicto**.



Image by Vlad Konstantinov



# Get the most out of your Magazine!

If you're having problems viewing the double-page spreads that we feature in this magazine, follow this handy little guide on how to set up your PDF reader!



## SETTING UP YOUR PDF READER

For optimum viewing of the magazine, it is recommended that you have the latest Acrobat Reader installed. You can download it for free, here: [DOWNLOAD!](#)

To view the many double-page spreads featured in 3DCreative magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

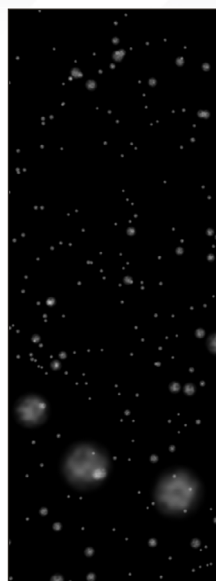
1. Open the magazine in Reader;
2. Go to the **VIEW** menu, then **PAGE DISPLAY**;
3. Select **TWO-UP CONTINUOUS**, making sure that **SHOW COVER PAGE** is also selected.

That's it!



# CONTRIBUTING ARTISTS

Every month artists from around the world contribute to 3DCreative, and you can find out a little more about them right here! If you'd like to get involved in the 3DCreative magazine, please contact: [simon@3dtotal.com](mailto:simon@3dtotal.com)



## MIKE ZUGSCHWERT

Mike Zugschwert is an FX Artist who works in Realflow, Maya, and 3DS Max. He was the Lead FX Artist for the short film Azureus Rising and now applies his talents to television commercials. He is currently working at Make in Minneapolis, MN.  
<http://www.mikezfx.com>  
[mzugschwert@gmail.com](mailto:mzugschwert@gmail.com)

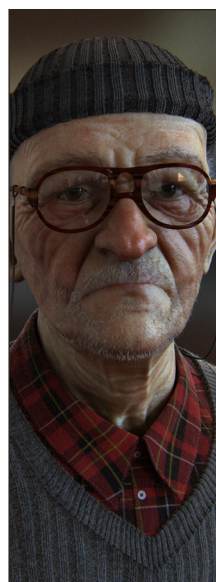


## RODRIGUE PRALIER

Rodrigue Pralier is the lead Character artist at Bioware Montreal Quebec. After working in the games industry for nearly a decade

he has recently shipped the highly anticipated game Mass Effect 3 and has previously worked on other games like Army Of Two:40th day.

<http://www.rodriguepralier.com/>  
[rodriguepralier@hotmail.com](mailto:rodriguepralier@hotmail.com)



## ANTO JURICIC

Anto Juricic Toni is a character artist and he currently lives in Bosnia and Herzegovina, where he works at Primetime Studio as a modeler and texture artist on animated features. Along with his passion for creating CG characters he also enjoys teaching others and sharing his techniques through many online tutorials and publications.  
<http://anto-toni.cgsociety.org/gallery/>  
[monty.band@gmail.com](mailto:monty.band@gmail.com)

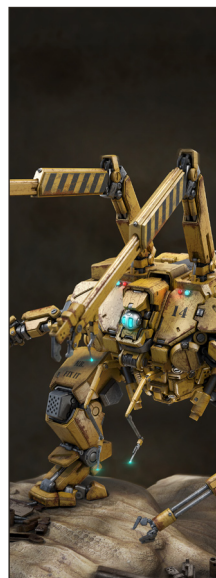
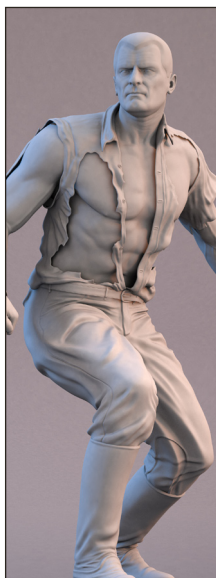


## PAUL NELSON

Paul studied fine art and illustration before beginning his career in the games industry, focusing on Concept and Character Art.

He's worked on titles such as Killzone 2. He currently works in Film as a Lead Texture artist and has just finished work on Prometheus.

<http://www.paul-nelson.com/>  
[gatis6@gmail.com](mailto:gatis6@gmail.com)



## VICTORIA PASSARIELLO

Victoria graduated in Industrial Design in 2008. A year later, she started her career as a self-taught CG artist. Since then she has been working in this area while studying and learning new stuff every day. Her abilities include the development of any design from the concept to the final 3D model.  
<http://www.vitru3d.com>  
[info@vitru3d.com](mailto:info@vitru3d.com)





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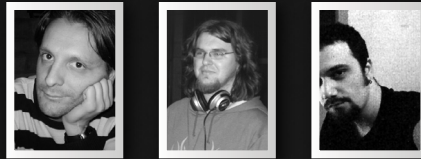
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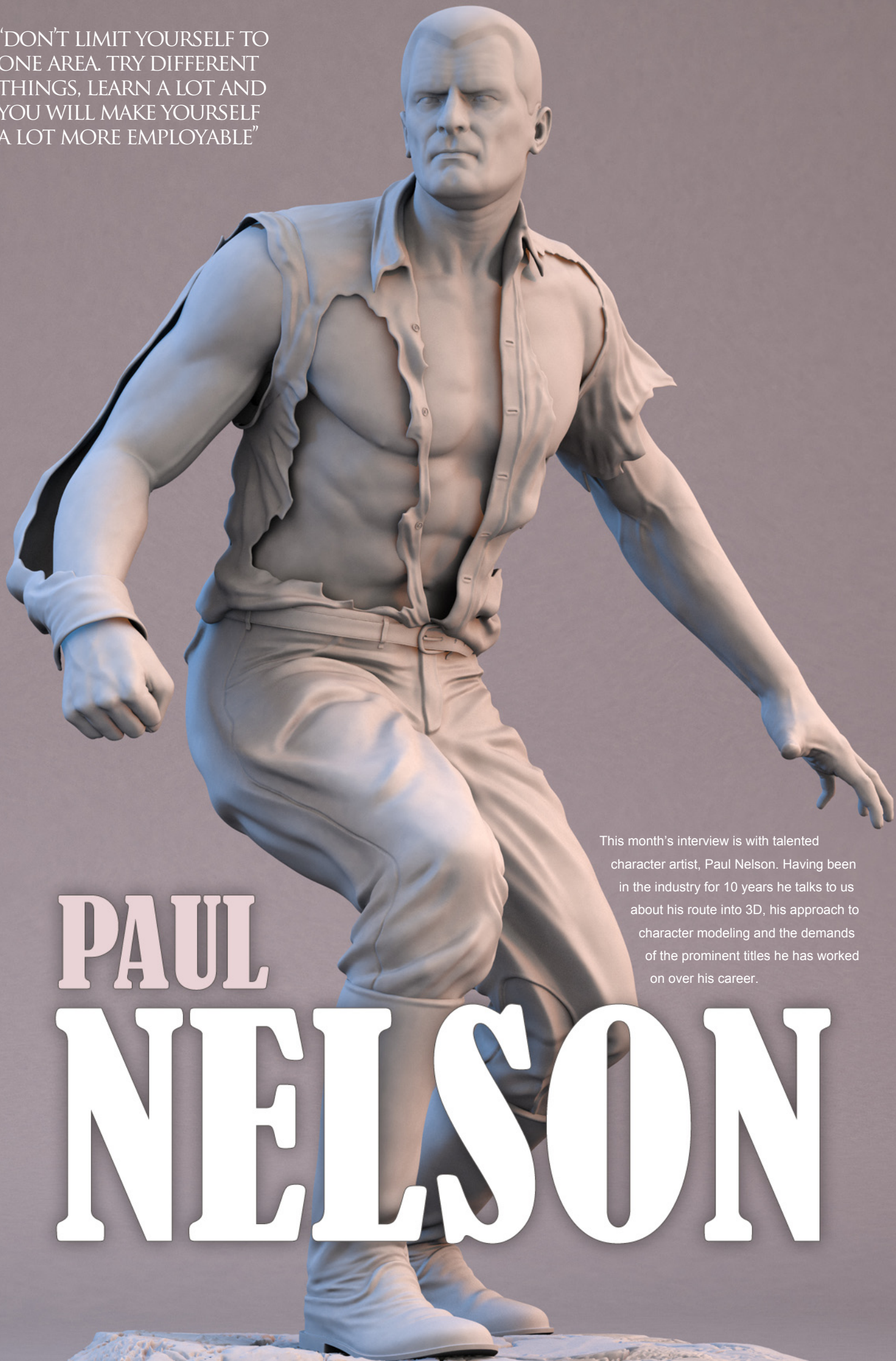
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"DON'T LIMIT YOURSELF TO ONE AREA. TRY DIFFERENT THINGS, LEARN A LOT AND YOU WILL MAKE YOURSELF A LOT MORE EMPLOYABLE"



This month's interview is with talented character artist, Paul Nelson. Having been in the industry for 10 years he talks to us about his route into 3D, his approach to character modeling and the demands of the prominent titles he has worked on over his career.

PAUL

NELSON

**Can you tell us a little about your background and your route into 3D?**

Well, like many guys in this industry I grew up watching spellbinding films full of visual effects and playing video games. I remember when I was a kid, there used to be a program on TV called *Movie Magic*, which would take viewers behind the scenes of movie making and show how all the visual and special effects were done. Having been exposed to all of this, I knew what I wanted to do.

I'm a traditionally trained artist, and after leaving school I went on to do a foundation course in Art and Design, which gave me a great insight into every aspect of the arts. During this time I found I had a passion for illustration and after this I went on to study Illustration at college.

After college I went freelance as an illustrator, producing published pieces and private commissions, and spent some time as a fine artist. During this period I started to get into 3D and, like quite a few people, I'm self-taught and would spend hours of my spare time learning how to model and found it really addictive. I decided at this point that this was what I really wanted to do, so I applied to Codemasters and I got a job as a 3D generalist and so that's when my career in 3D began.



**"THE BIGGEST LESSONS I LEARNED WERE GOOD WORKING PRACTICES AND TIME MANAGEMENT, WHICH I STILL FEEL ARE SO IMPORTANT"**

**What do you feel were the most valuable lessons you learned during your first job at Codemasters?**

I learnt so much in my first job. I learnt to be very humble; there are so many talented people in this industry and no matter how much you think you know there are always others out there that know a lot more than you. I absorbed and learnt as much as I could from those around me. The biggest lessons I learned were good working practices and time management, which I still feel are so important especially when you are constantly working to tight deadlines.



**Having been in the industry for the past 10 years, where would you say art practice has evolved the most from the perspective of a character artist?**

When I began I was working on very low poly meshes and, in a way, you had to be a lot more creative to get the best out of the limitations you had at the time. Due to the increase in technology, obviously things have become a lot more demanding, especially in terms of level of detail and quality. Adding software like ZBrush and Mudbox into the pipeline and creating high resolution meshes has added a whole new dimension to the job.

**You have worked on some prominent titles over your career so far, but which proved the**



#### most demanding and why?

Probably my transition into film, which is a different animal in itself; I have now gone back to my roots and once again I'm doing a bit of everything.

#### In what ways was this transition demanding compared to your previous experiences?

From my experience in games I always seemed to have a lot of time and things seemed to be always changing. I would build a character and then six months down the line the brief or the design would change. It wasn't because it was a bad design; the team and upper management would just get bored of looking at the same character, so they would change it.

I feel sometimes that the luxury of time is a bad thing. People procrastinate and unfortunately this has a damning effect on a project. With film I've observed that we don't have the luxury of time and things have to get out of the door

quickly and this is the process I thrive on; a very quick turn around, but obviously one that is a lot more demanding. The difference in film is in a year I can potentially work on three titles, compared to spending up to two or three years on the same game, with a chance that sometimes those games won't even see the light of day. This isn't such an issue when it comes to film.

**"I'VE ALWAYS BEEN A FAN OF THE TRADITIONAL ADVENTURE GAMES. I TEND TO LEAN TOWARD SOMETHING THAT HAS AN ENGAGING STORY"**

**What game genres interest you from an artistic point of view and what titles would you like to have been involved with if you'd had the opportunity?**

I've always been a fan of the traditional adventure games. I tend to lean toward





something that has an engaging story. I used to love all the point and click adventures from LucasArts games like *Indiana Jones and the Fate of Atlantis*, *Monkey Island* and *Grim Fandango*. Artistically they were great, the stories were brilliantly written and, most of all, they were funny. Obviously with all the new technology that we have today, the so-called "adventure" game has taken huge leaps forward. I think there are two titles that I would love to have had the opportunity to work on in the last couple of years, and those would have to be *Heavy Rain* and *Uncharted*. Those guys have done a fantastic job and have done things that I didn't think were possible with the current generation of consoles.

**What is your usual approach to character modeling when you receive a design?**

This depends on the design and whether you receive concepts or not. Most of the time I never receive concepts and so I block out the model in Maya or whatever modeling software I've chosen to use. At this stage I very rarely worry about the edge loops working for animation, as long as I have a nice clean topology for sculpting in ZBrush. I always start with a default head, especially when producing characters

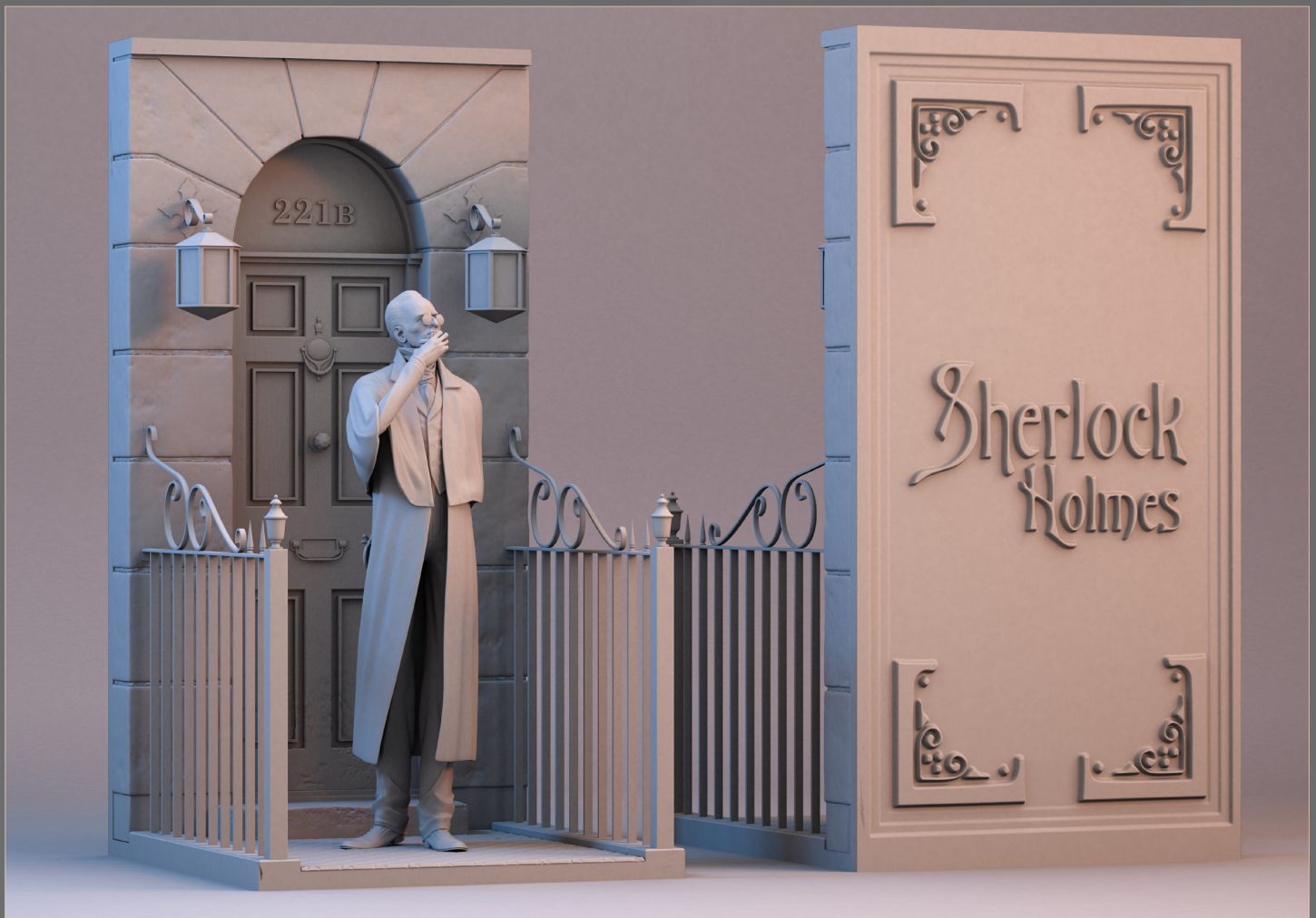
for a game, as I create a default set of blend shapes that can be used for each character. It's a great time-saver, plus it's a great first pass to start with and once you've adapted the head to a new character you can always make them more bespoke later.

After the blocking out is done I will take those meshes through to ZBrush and sculpt all the details and refine the silhouette of the mesh. At this stage it's always good to get the art director's feedback, or if it's a personal project, take the time to look over it and make any final

tweaks to make sure you're happy. After this I will decimate the meshes, take them through to a package like 3D-Coat and then retopologize. There's no right or wrong way of modeling unless you're building a mesh for animation; just make sure to keep the topology clean.

**It sounds as though the concept phase of character design has evolved into part of the 3D process now, due to the speed and efficiency of ZBrush. Would you say this is becoming more common now or do you think it is particular to certain projects?**





Most definitely. With the advent of software such as ZBrush and Mudbox it's becoming more common practice. We now have the ability to work more efficiently and faster than ever, and it gives art directors and supervisors the ability to look at something very quickly in 3D. Not everything that is visualized in 2D translates well into 3D, so I think it's becoming an integral part of the process.

#### How do you go about texturing the skin on your characters?

It depends on the character's design really. Most of the time it would be hand-painted if in a cartoon style, or for a more realistic approach I would tend to use a lot of photographic references. I use Photoshop a lot, but more recently I've made the transition to using Mari.

#### How does Mari compare to Photoshop?

Well, I can't really compare them as they are

quite different. For me they work hand in hand. People might not be familiar with some of the tools found in Mari, but for me it's the ability to be able to paint directly on to a high resolution mesh that gives it the upper hand.

#### What tips would you give to someone wishing to break into the industry as a character artist?

To be honest this is something that I have been asked a lot over the years. I always had an interest in becoming a character artist when joining the games industry, but I soon came to realize that just focusing on being a character artist was limiting me when it came to getting a job. For me, getting a foot in the door was a lot more important. I started as a generalist and I got to work on a bit of everything from concept and prop modeling to environments and creature modeling, and I learnt so much. All the stuff I learnt I put to good use when it

came to my character modeling. The great thing is, once you're in the industry you have opportunities to show what you are interested in and you get to move around. I showed that I had an interest in character modeling and once I got the opportunity I took it. I think what I am trying to say is don't limit yourself to one area. Try different things, learn a lot and you will make yourself a lot more employable and hopefully you will get that character role you've always wanted.

#### Thanks for taking the time to talk to us!

Thank you guys, it was a pleasure. Hopefully this has given you a small insight into my path into 3D and what working in the industry entails.

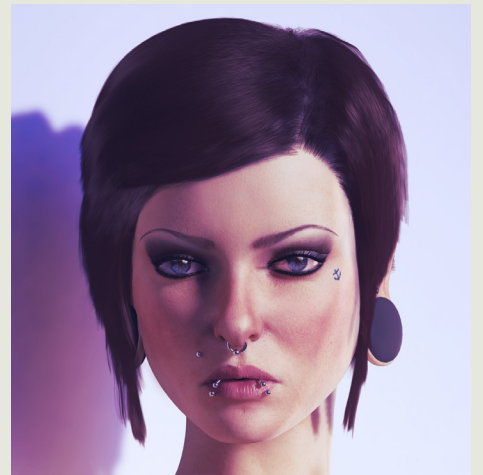
#### PAUL NELSON

Web: <http://www.paul-nelson.com/>

Email: [gatis6@gmail.com](mailto:gatis6@gmail.com)

Interviewed by: Richard Tilbury





# the GALLERY

This month we feature: [Veprikov](#) | [Vlad Konstantinov](#) | [Antonio Peres](#) | [Oleg Nikolov](#)  
[Jonatan Catalan](#) | [Serg Andreychenco](#) | [Rafael S. Benedicto](#) | [Pawel Brudniak](#) | [Radu Henegar](#) | [Kris Kelly](#)



## LAST YEAR'S SNOW WAS FALLING...

Serg Andreychenko

<http://miesrohe.deviantart.com/gallery/>

[sergey.sen@mail.ru](mailto:sergey.sen@mail.ru)

(Above)

## KIMOCHI'S PLAYGROUND

Jonatan Catalan

<http://www.jonatancatalan.com>

[jonatancatalan@gmail.com](mailto:jonatancatalan@gmail.com)

(Right)



## A WOLF IN SHEEP'S CLOTHING

Kris Kelly

<http://www.kriskelly3d.com>

[kriskelly3d@hotmail.com](mailto:kriskelly3d@hotmail.com)





BAGPIPER

Oleg Nikolov

<http://chokata.cghub.com>

[chokata@abv.bg](mailto:chokata@abv.bg)





SHORT TRAVEL

**Vlad Konstantinov**

<http://swordlord.cgsociety.org/gallery/>

[swordlord3d@gmail.com](mailto:swordlord3d@gmail.com)

Image created for SOL 90 Publishing House

## EAT WORM

Antonio Peres

<http://antonioperes3d.wordpress.com/2009/08/12/destaque/>

[junioperes2004@ig.com.br](mailto:junioperes2004@ig.com.br)

(Top Right)

## IRON MAIDEN

Rafael S. Benedicto

<http://www.sgthk.deviantart.com>

[sgthunterkiller2000@yahoo.com](mailto:sgthunterkiller2000@yahoo.com)

(Bottom Left)

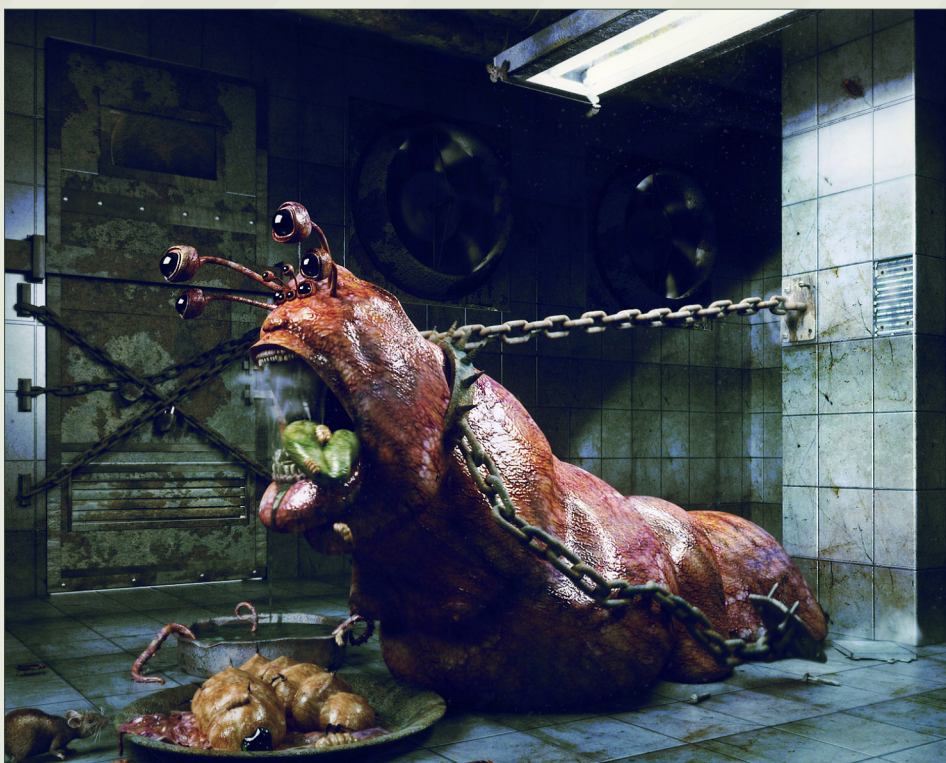
## CALM

Veprikov

<http://veprikov.com>

[veprikov.n@gmail.com](mailto:veprikov.n@gmail.com)

(Bottom Right)





## TROLL

Pawel Brudniak

<http://www.pawel.brudniak.com>

[paulospb@wp.pl](mailto:paulospb@wp.pl)

(Top)

## OUT THERE

Radu Henegar

[radu\\_henegar@yahoo.com](mailto:radu_henegar@yahoo.com)

(Bottom)



# GUIDE TO FX - **PARTICLES & DYNAMICS**

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*3DCreative* are branching out from creating stills in this amazing tutorial series, which will be looking at how to set up FX and particle systems in 3ds Max and Maya. Our amazingly talented artists will tackle some of the most common and popular effects, and will show us how to set them up and manipulate them to match an environment of your choice.



**3ds max**

CHAPTER 04 **SNOW**

## CHAPTER 04 – SNOW

Software used: 3ds Max

There can be a lot of variation in the way we add snow to a 3D scene, depending on the weather conditions we wish to portray. There can be dense blizzards, large flakes, sparse sprinklings or the familiar, somewhat classic, fluttering snowfall, which can add a lot of atmosphere and romance to a scene.

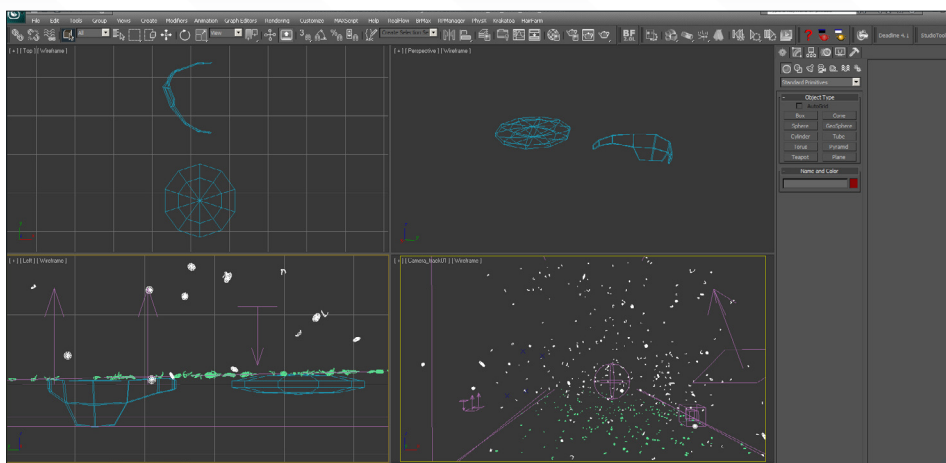
Using particle flow and a number of standard space warp modifiers within 3ds Max we will add snow to a real production shot, and go over some render settings and render passes needed to add realism later in the compositing stage.

**Note:** You may need to download and install a plugin/space warp called BetterWind as this is used in the scene file that accompanies this tutorial. This is free to download and has expanded wind control parameters compared to the standard 3ds Max version. You can download the correct version for your version of 3ds Max by going to [www.maxplugins.de](http://www.maxplugins.de) and searching for BetterWind.

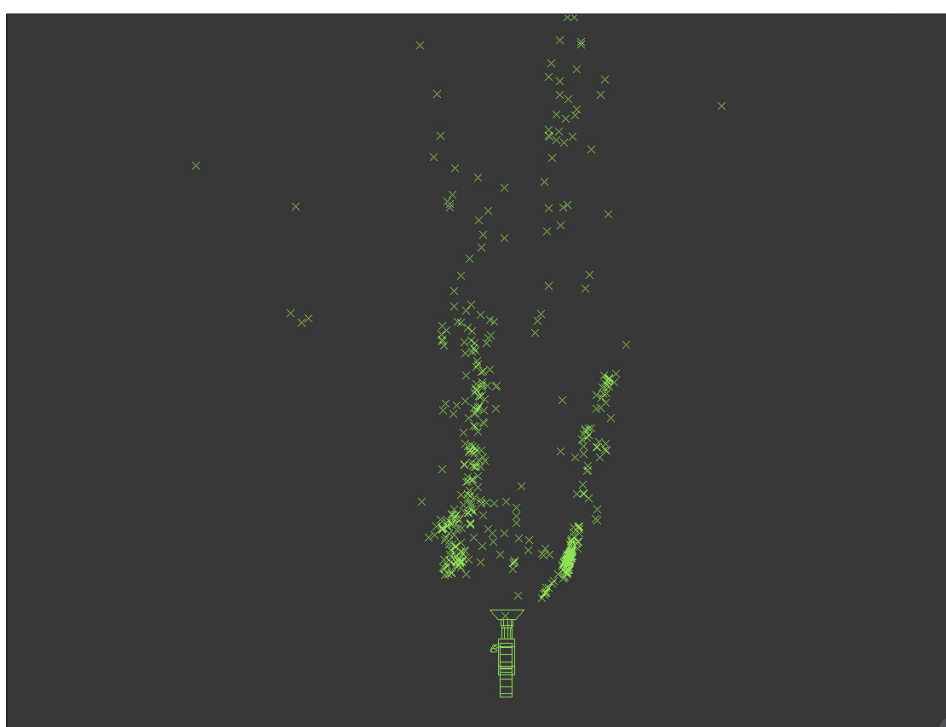
The finished scene can be opened and examined by opening the scene file “Shot\_001\_Snow\_Track\_001.max”. This is a real production scene file from a commercial my studio worked on last year. Note the tracking data/markers and moving/tracked camera that walks forwards a little before turning to face another direction (Fig.01).

If you open the Layers manager you can see the tracking information on a layer called “tracking\_data”. It’s important to always keep scene files tidy and organized, even if it’s a relatively simple FX scene such as this.

We can reference the marker positions of the tracking data to correctly orientate and place our snow/particle emitters and deflectors. Having it on a separate layer means we can quickly and easily turn visibility on and off. Feel free to use



01



02

your own tracking data/camera-tracked scene to add snow to.

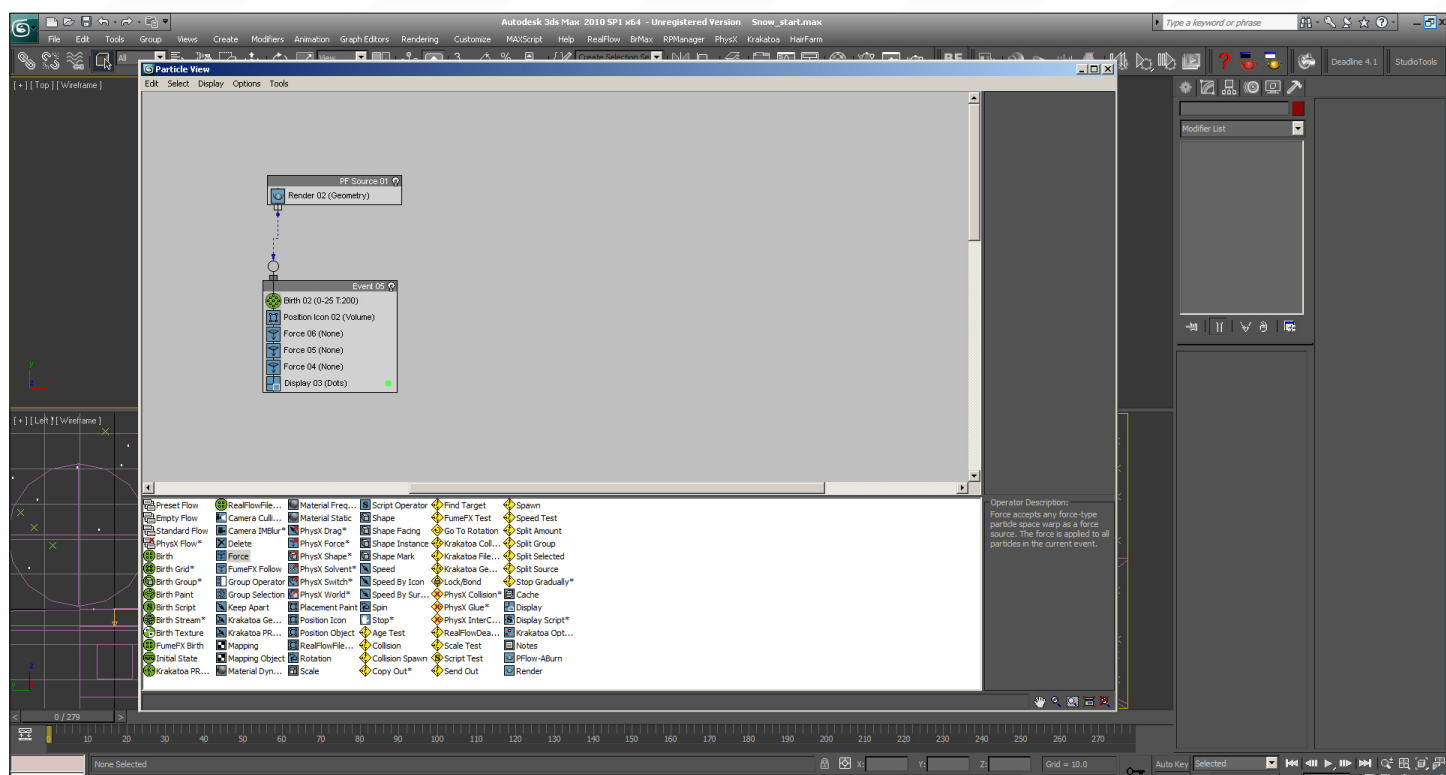
Open the scene file “snow\_start.max”. As previously mentioned, we can find the tracking data in the Layers manager. Click the light bulb icon to unhide the nulls/markers. We can clearly see the layout of the scene in the top view (Fig.02).

From the orthographic views we can see where the ground plane and walls should/might be from our tracked scene. Scrub the timeline and watch the scene through the camera view. We can make out walls/sides to the street that the camera is moving along.

Hit 6 to open the Particle View. Drag out standard flow to create a default particle emitter with basic functions such as Speed and Shape.

Delete the Speed and Shape nodes and change the Display type to Dots. We will be using forces to add movement to the particles and will later be instancing custom geometry for the snowflakes.

Select your particle flow icon in the viewport and move/rotate it into position above the camera and just out of view. Adjust the dimensions of the emitter to a large area so that when the snow particles are emitted, they fall over a wide area.



Add three Force operators to the particle flow. You can add just one, but by splitting all of the forces and influences over more Force nodes we will have finer controls later for getting realistic movement (**Fig.03**).

If you scrub the timeline, we can see that particles are emitted from frame zero over a default number of frames, but just remain static on the position icon's surface.

Add a Gravity space warp to the scene and then add it to one of the Force operators we added to the particle flow tree. Then reduce the Influence % on the Force node to 500.

Scrubbing the timeline again, we can see that the particles now fall downward – but much too rapidly for the behavior of snowflakes.

Select the Gravity space warp and reduce its Strength to 0.02. The particles now fall at a slow rate, but appear rather linear in terms of their movement (**Fig.04**).

**Note:** If your particles seem to be travelling upwards or in the wrong direction make sure

your Gravity space warp is orientated to the correct/desired axis.

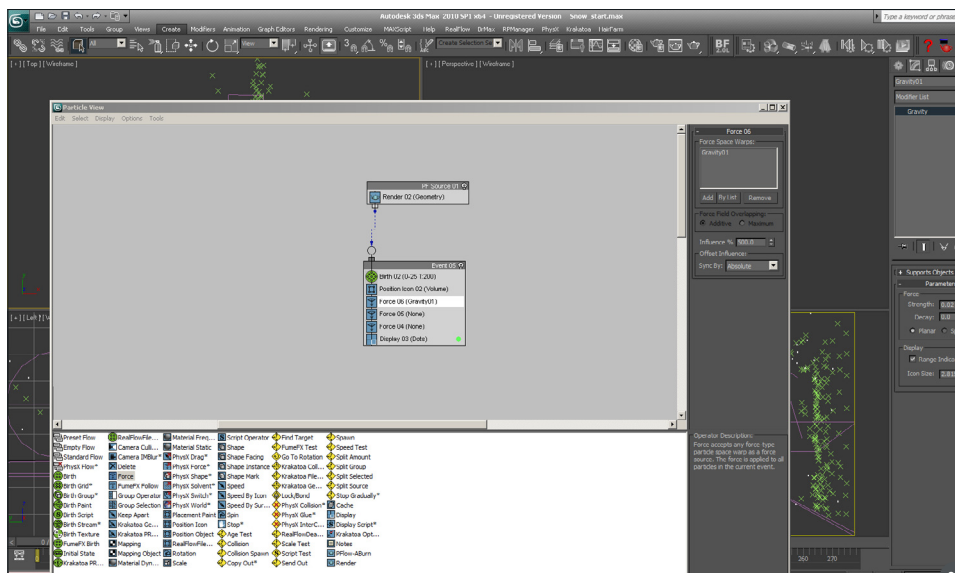
We need to add some turbulence and directional wind to the scene to add more realistic movement to the snow particles.

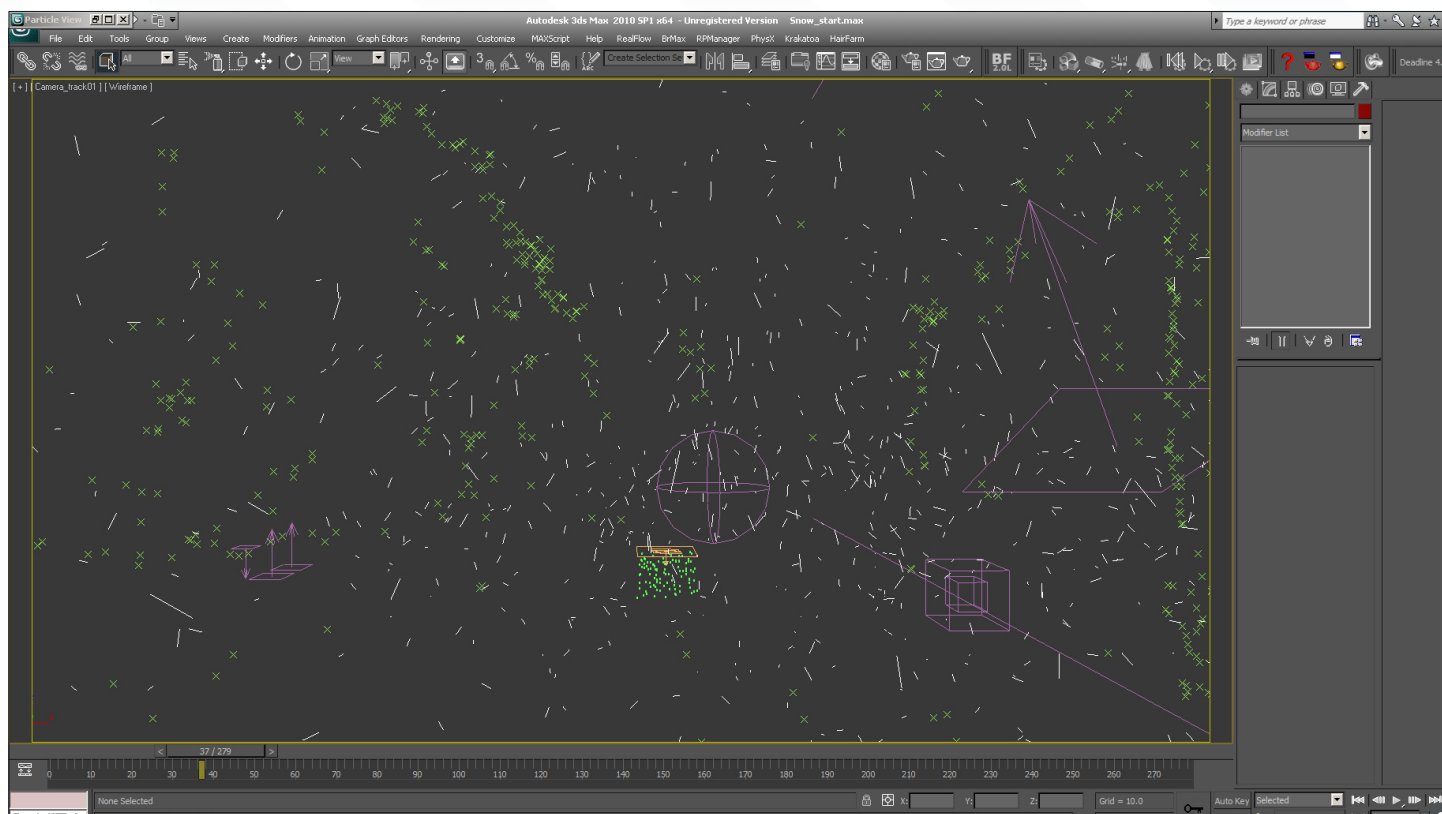
Create two standard Wind space warps. Again, pay attention to the orientation/direction of the wind icons and consider the behavior of the snow you wish to create. This may also be influenced by your scene. In this case we are

creating a typically romanticized snow fall with subtle currents of wind.

Set the strength of the first Wind to 0 and enter 0.15 for Turbulence, 1.18 for Frequency and 0.05 for Scale. Consider the direction of the wind in the scene and orientate the Wind nodes accordingly. In this scene they are both simply pointing upwards along the Z axis.

Select the second Wind and set the Strength to 0.09. Change the Turbulence to 0.21,





Frequency to 1.18 and Scale to 0.17. These are the values I ended up using for this particular scene, but feel free to experiment with changing these values and observe the particle behavior.

Add both of these Wind space warps to one of the empty Force nodes within the particle flow. Adjust the Influence % of the Force node to 900. Scrub the timeline again. We can now see the particles falling, fluttering, twisting and turning. Change the Display node in the particle flow to Lines to see the direction and speed of the particles more clearly (**Fig.05**).

The particles fall/pass through what should be the ground in our scene. Let's add a deflector to help correct this.

Add a simple plane deflector to the scene and orientate it to the ground using the tracking marker data. Clone this deflector twice more so you have three in the same position. We will use each deflector to give different/varied behavior to the snow that collides with them. For example, some snow will stick and melt/die, whilst other flakes will continue to float about.

Add three Collision nodes to the particle flow. Add one of the deflectors to the Collision node and change the Test True If Particle options to Stop upon Collide. Add a new Display event to the particle flow and connect the output of the Collision node to this new Display node.

Scrub the timeline to see the particles fall, and then stop and change color upon collision with the deflector. The color change is coming from the new display event. This helps us to see where certain particles are within the particle flow tree.

Now add a Spin node to the new Display node and set all the parameters to zero. This will ensure that when the particles have collided they will stop spinning and rotating. This is particularly important, as we will be instancing geometry later for the snowflakes, rather than using the dot display.

Next add a Speed By Surface operator, a Rotation node and a Speed node. Set the Speed By Surface node speed to 5 and the direction to Surface Normals.

Under the Rotation node, set the Orientation matrix to Speed Space and the Z axis to 90. Now we have assigned a more complex behavior pattern to the snow particles that might collide with this first deflector. They collide, stop spinning, slow down considerably but then rise slowly as if a light wind has lifted them back upwards (**Fig.06**).

Add the second deflector to the second Collision node and connect a Delete operator to the output of this node. This second deflector will kill the particles immediately upon impact.

Add the third and final deflector to the third Collision operator. Set the Collision behavior to Stop.

Create another new Display node in the particle flow and connect this to the third Collision operator. Add a Go To Rotation operator under this new event and enter the following parameters:

- Check Transition Period Ends
- Transition By: Event Duration

- Target Rotation: Constant
- Check Match Initial Spin
- Ease in % to 5.6 and check Stop Spinning under Transition End

Add a Rotation node and set it to World space with Divergence of 60. Under this add an Age test node set to Event age, Greater than Test Value and a Test Value of 25 with a variation of 12. Now add a Spin node and set it to random 3D.

Finally, add a new display event that is connected to the previously added Age test. Add a Scale operator to this event and set Type to Relative First, Scale to around 30% and Bias to Towards Minimum.

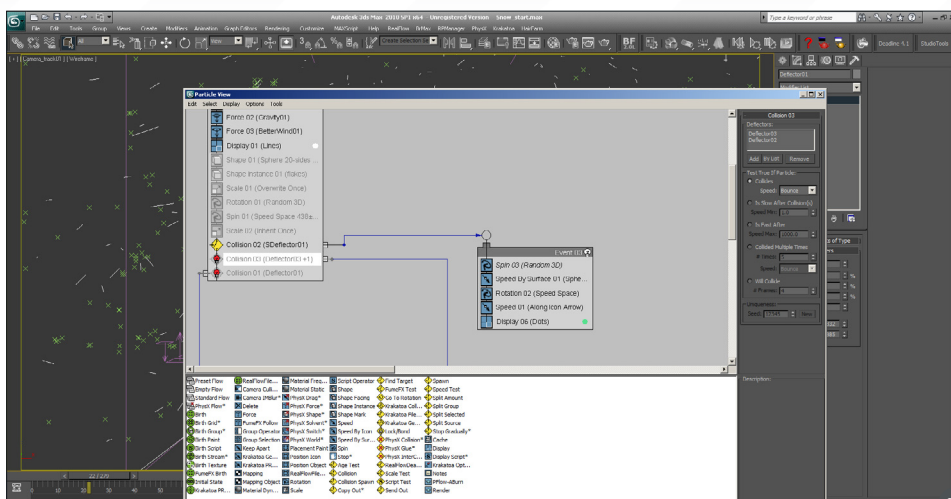
This last collision event we have just built means that any particles that collide with the designated deflector will stop and slowly shrink down, creating the illusion of larger flakes melting. All three of these collision events combined creates some realistic variation for the snow as it collides or comes near the ground – with some particles blowing back upward, some melting slowly and some melting/dying immediately (**Fig.07**).

We can continue to adjust the deflectors, wind parameters and amount of snow by adjusting the scene objects and particles for an infinite number of variations.

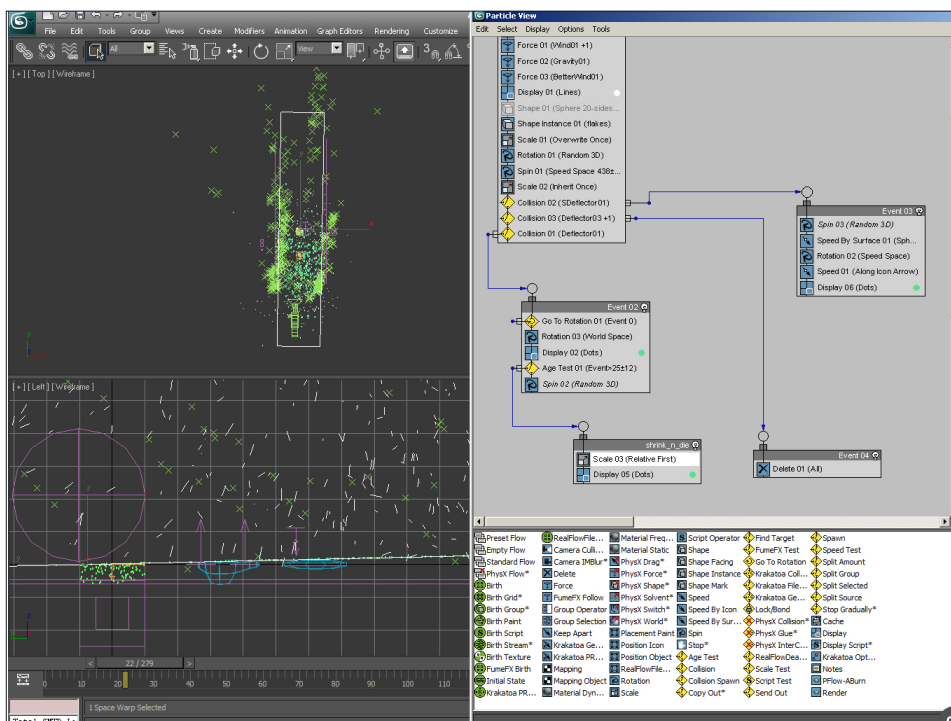
Adjust the Birth operator within the particle flow to a minus value to get some snow already emitted into the scene.

Next we need to make some simple, custom geometry to use for the snowflakes themselves. In reality, every single flake of snow is unique and varied in shape and size. The more objects you create to use as snowflakes, the more varied and realistic your snow will appear.

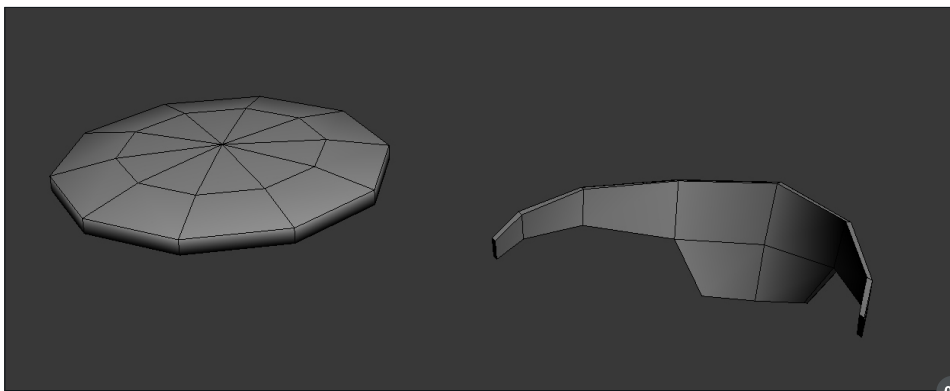
In this scene I've used just two simple objects to represent the flakes, and used the scale



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operators within the particle flow to add further variation.

You can use any geometry you like for your flakes. I have made two low resolution spheres,

squashing one into a flat shape and re-modeling another into a more random, fragmented shape by deleting faces and moving vertices. Refer to the final example scene to see these (**Fig.08**).

Group these objects together, add a Shape Instance operator to the particle flow and select the snowflakes group. Enable Separate Particles for Group Members.

The particles will now use these custom-made snowflake shapes for their appearance when rendered. Consider updating and adding to this group with more snow shapes if required. To see these/the geometry in the viewport, change the Display nodes within the particle flow from Dots to Geometry and scrub the timeline (**Fig.09**).

The final thing to add to our particles is a material/shader before we render the scene. Hit M to open up the Material Editor. The material can be extremely simple and is only a white diffuse color at around 50% self-illumination. To add this to our snow particles, create a Material Static node and add it to the top of the particle flow tree underneath the Render node. Drag and drop the white material from the Material Editor onto the Assign Material switch.

All that remains is to render our particles from the camera view. In some cases, you may wish to render out passes such as ZDepth, Velocity and IDs. In this case, I have rendered the snow particles out with 3D motion blur enabled in V-Ray and a ZDepth pass – enabling me to add depth of field effects later in a compositing stage with the application of choice.

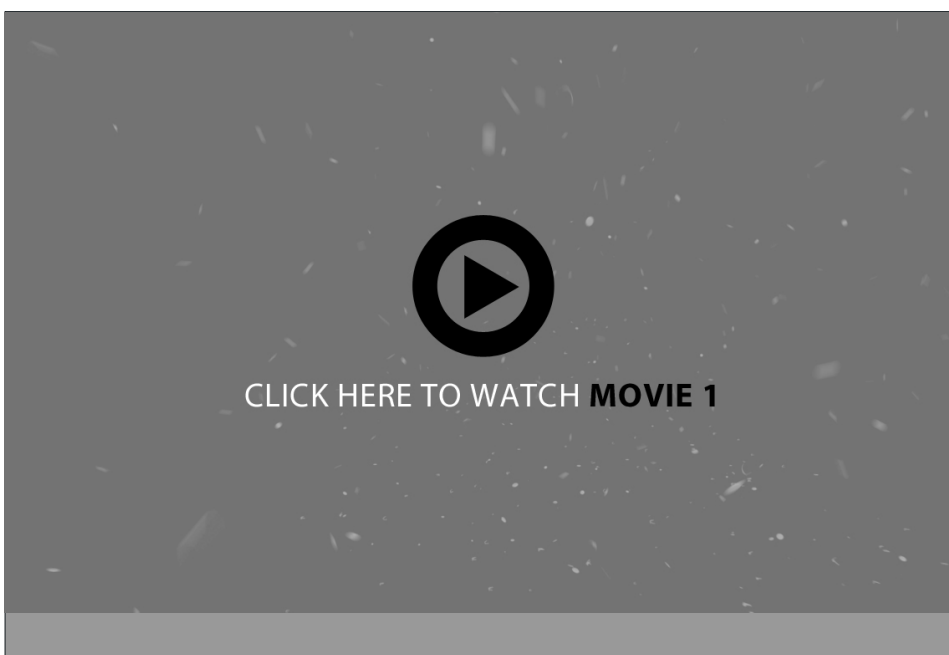
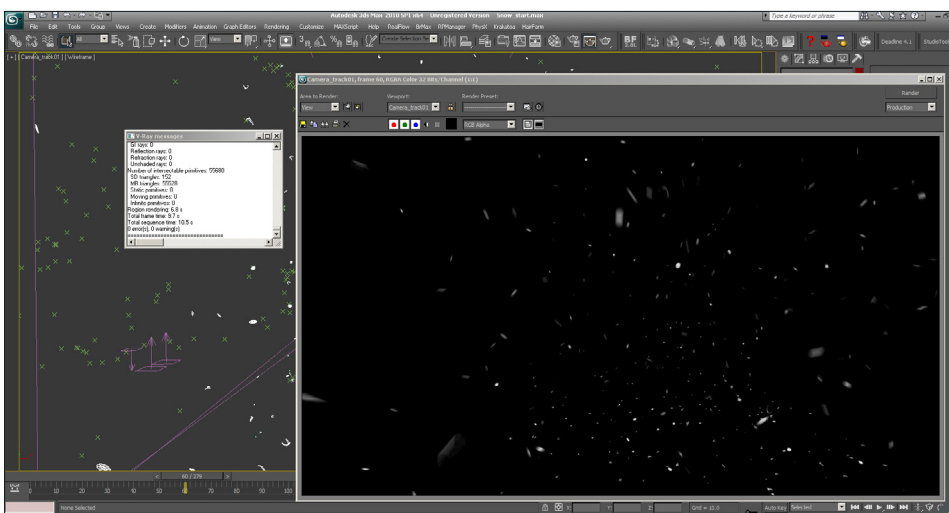
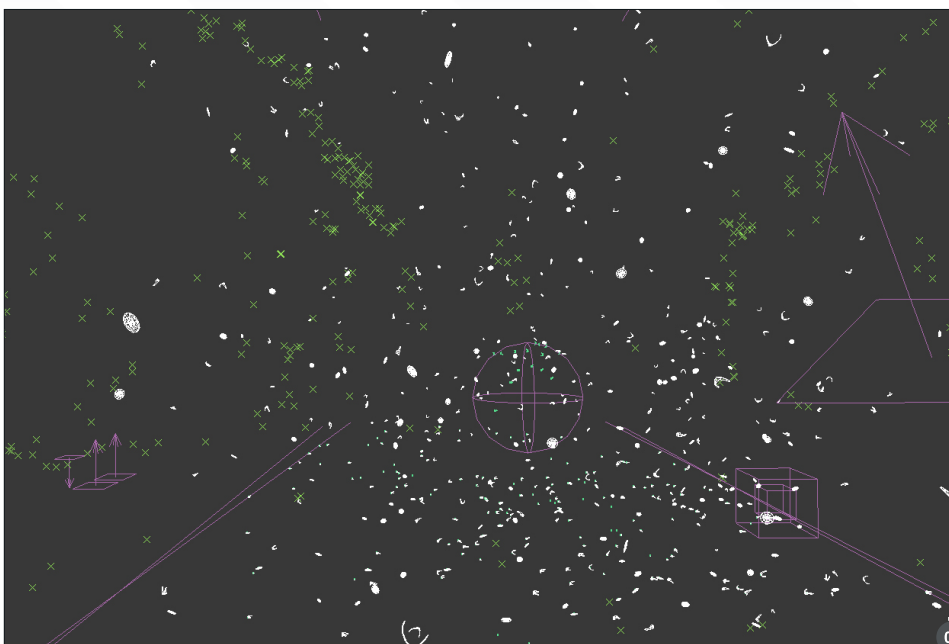
The render can be very fast due to having no lighting in the scene and creating the illusion of illuminated snowflakes with the self-illuminated material.

The final result can be seen in **Fig.10** and the final render in **Movie.01**.

MATT CHANDLER

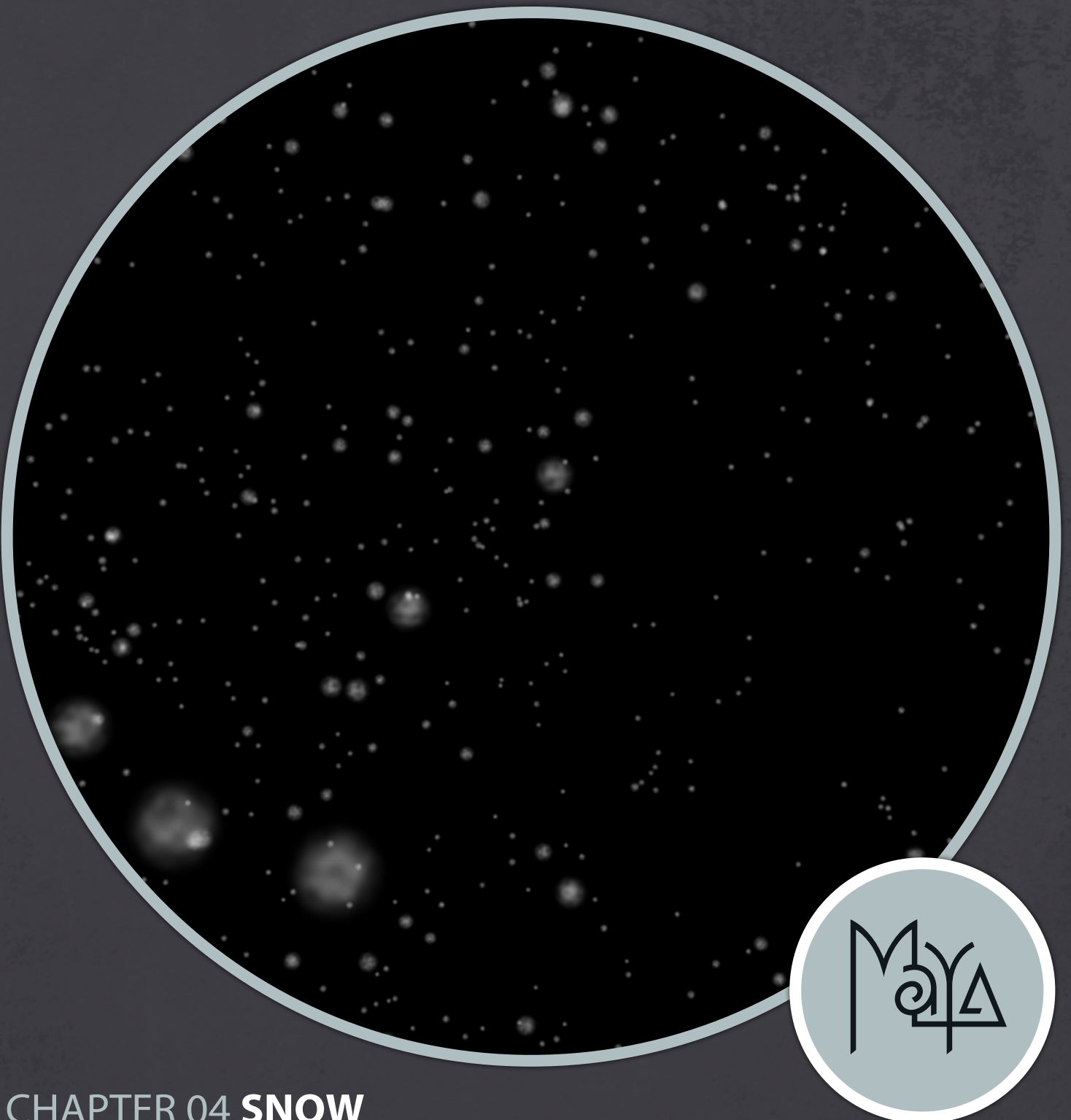
Web: <http://www.angry-pixel.co.uk>

Email: [matt@angry-pixel.co.uk](mailto:matt@angry-pixel.co.uk)



# GUIDE TO FX - **PARTICLES & DYNAMICS**

*3DCreative* are branching out from creating stills in this amazing tutorial series, which will be looking at how to set up FX and particle systems in 3ds Max and Maya. Our amazingly talented artists will tackle some of the most common and popular effects, and will show us how to set them up and manipulate them to match an environment of your choice.



CHAPTER 04 **SNOW**

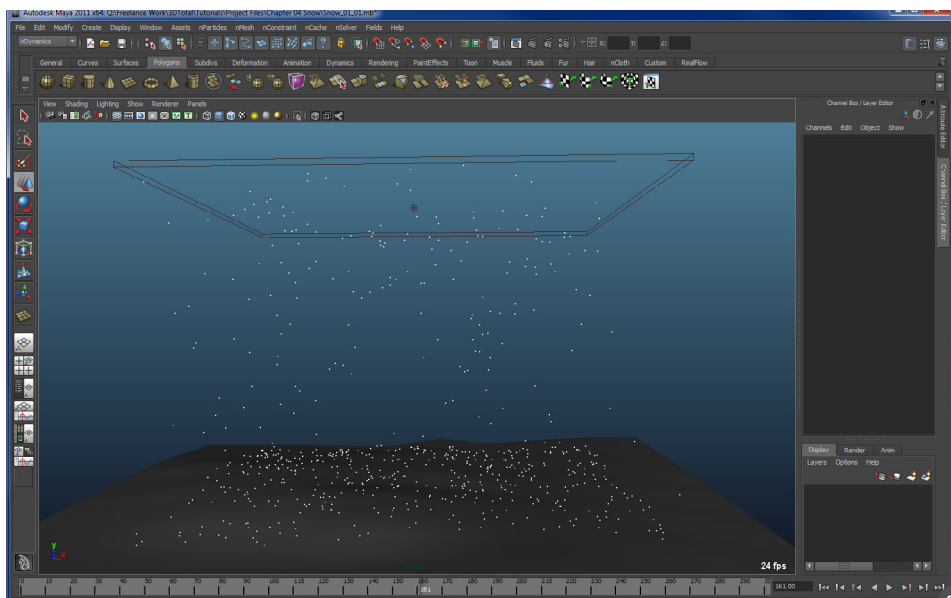
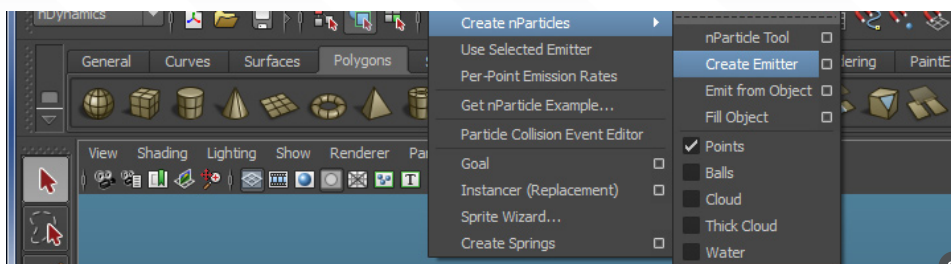
## CHAPTER 04 – SNOW

Software used: Maya

Making snow is pretty simple with Maya particles and there are two main methods you can use to create it. The first is to use nParticles with a volume axis field. This will create generic falling snow that covers a large area. The second method is to use a 3D fluid container to drive the motion of the particles. This will create a more realistic movement of the particles, but the simulation will get very slow as you increase the size of the container. Having said that, the position of the particles does get interpolated between voxels, so you can get away with fairly low res containers.

There are other ways to create snow, of course, such as selecting the snow PaintEffects brush and painting away, but I have never been able to get this method to look good and what you're creating aren't particles so you can't control them like particles. So I would recommend one of the main two methods I mentioned above, as they can also be built upon to create other effects with particles and fluids, and I'll be looking at both of them in this tutorial.

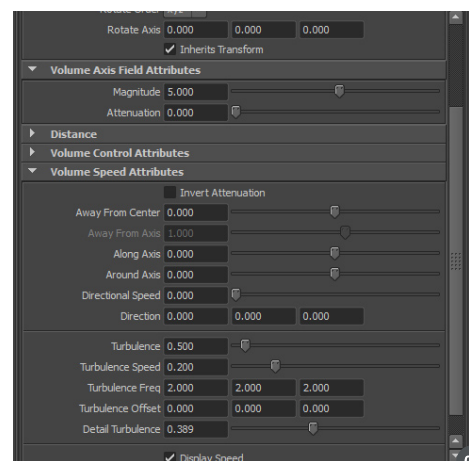
The first things we need are some particles. With the default set to Points, create an nParticle emitter (**Fig.01**). Set the emitter type to Volume and all the speed values to 0. Now your emitter will create particles that appear and fall straight down. Scale your emitter to be a large flat box and raise it up above where your ground will be.



Now create the geometry for your ground. I made a plane and used soft select to move some points around so it was perfectly flat. Then, with your ground selected, go to nMesh > Create Passive Collider. Under the nRigidShape tab, turn the Stickiness up to 10. Now the particles will stick to the ground when they hit. Your scene should now look like **Fig.02**.

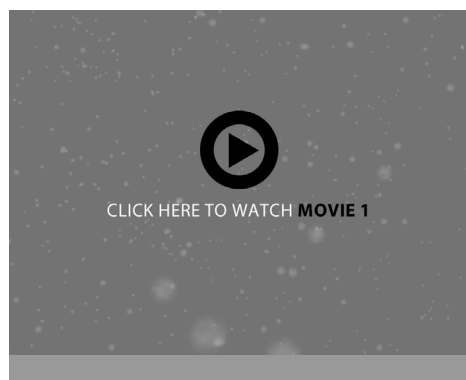
With your particles selected, create a Volume Axis Field and scale it up to fit your entire scene. Make sure you scale it uniformly because the turbulence field gets scaled with it, or you can do the math to figure out what your turbulence frequency should be to keep it from being skewed.

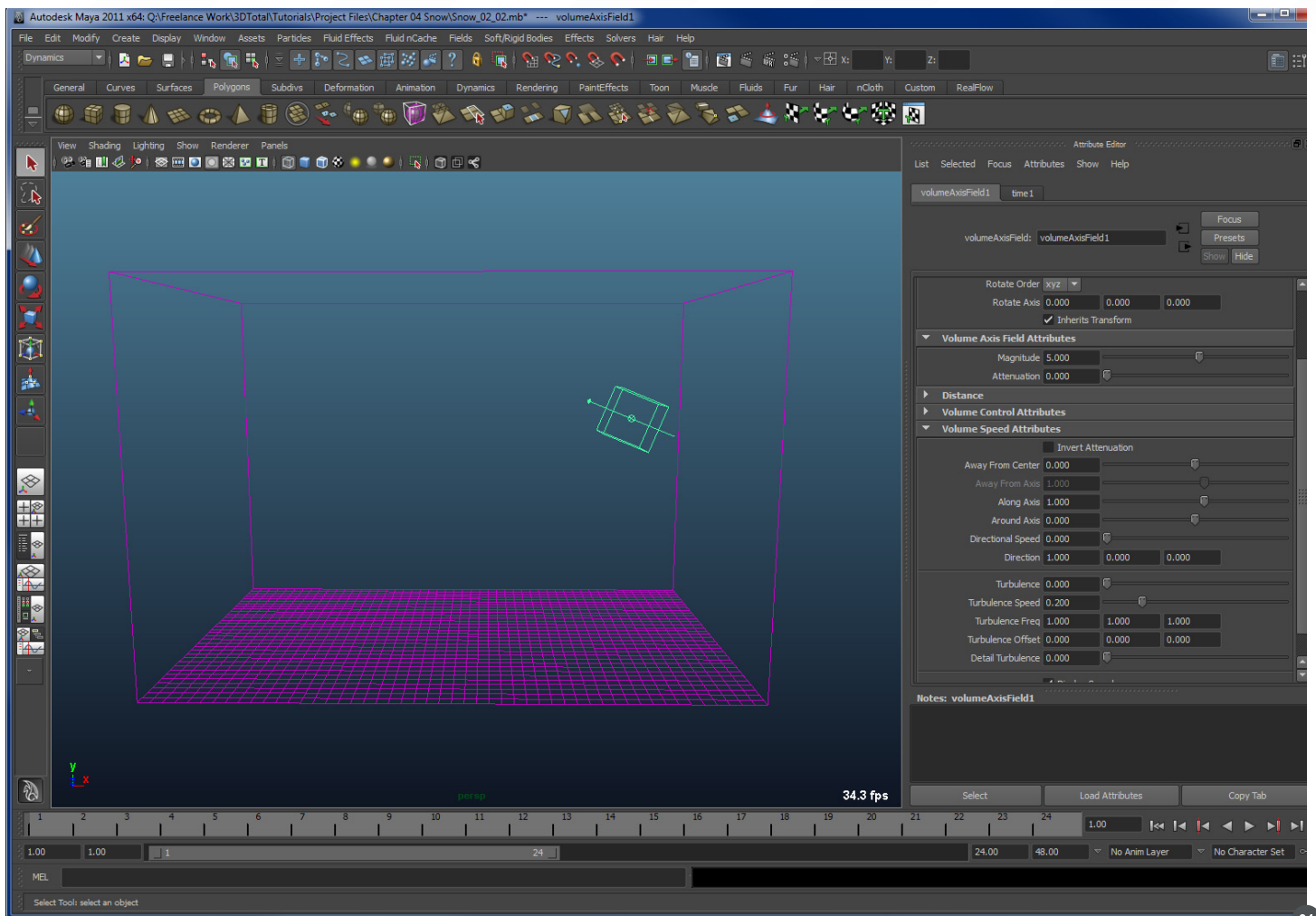
Set all the Speed attributes to 0 because we only need the turbulence for now. You can turn up the turbulence, but it will be hard to get the values we need because the particles are falling so quickly, so let's go back to the nParticleShape attributes and turn the drag up to .5. Also, under Shading I set the particle



render type to Cloud and dropped the particle radius to .05 to make the particles look better.

Now we can go back to the turbulence settings to see what we can do. After playing with the numbers a bit, I ended up with the values shown in **Fig.03**. Turbulence is the intensity, Speed is how fast the turbulence evolves through its cycle, Frequency is how many times the turbulence field is repeated in the volume, and Detail Turbulence is the intensity of a higher frequency second turbulence field.



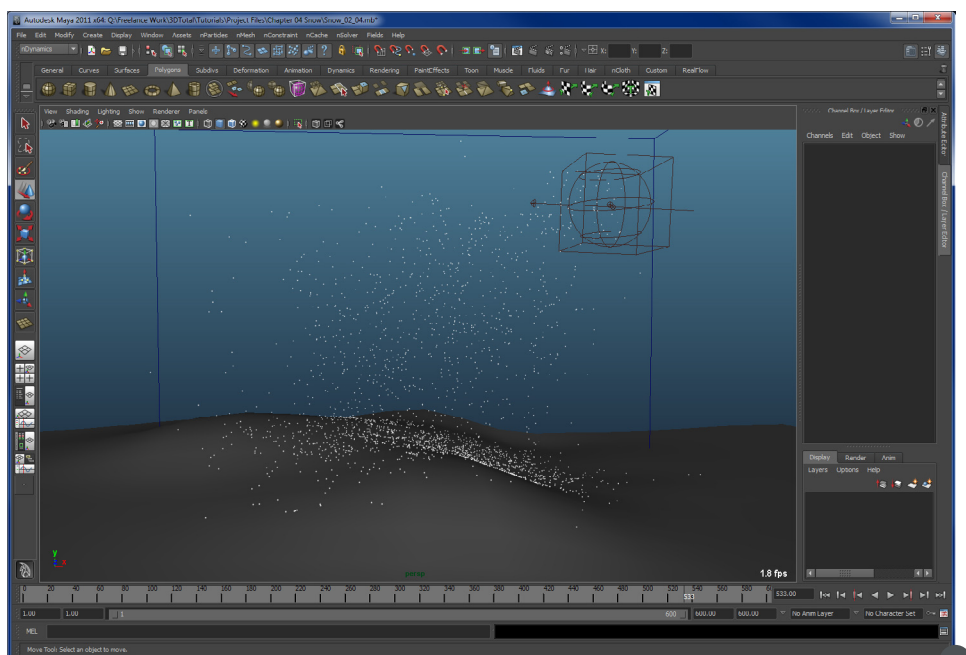


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The final result can be seen in **Movie 1**. The reason that I use a volume axis field instead of a turbulence field is because of the turbulence speed. The turbulence field has an X, Y and Z phase, but you would have to key them manually and it never really looks right that way. I also find volume axis fields to be the best thing for pushing particles around and I wish they were in other software packages as well.

For the second method, start by creating a 3D fluid container. There are some settings we're going to need, so set the base resolution to 50 to get some more detail, set the boundaries to None, -Y, None, turn the Damp up to .01 and set the High Detail Solve to All Grids. Also set the size to be 15 in X so the container is wider.

Now we need to add some motion to the fluid. With the fluid selected, create a volume axis field. Under Volume Speed Attributes, change



05

the Away From Center to 0 and put Along Axis to 1. Now your gizmo will have an arrow pointing along the axis and you can aim the volume axis field. Keep it pretty small and place it so it aims

towards the top center of the container (**Fig.04**). Now create an nParticle emitter and make it the same size and position as the emitter. I made mine a sphere to help differentiate between the

two in the viewport, and I also set the particle render type to Cloud and the radius to .02. Select your nParticle object, then select the fluid container and in the Fields menu select Affect Selected Object(s). Now the fluid container velocities will act as a force on the particles.

If you play it back, your particles will be shooting pretty far and out of the container. The problem is that the particles try to conserve their previous motion and add the fluid velocities to their current velocities, so they keep increasing in speed. To solve this, under Dynamic Properties in the nParticleShape attributes, set Conserve to 0. This means that the particles will not conserve any momentum, and will take all of their velocity from the fluid and the nucleus solver for the particles.

To make the particles fall a bit faster, you can increase the strength of gravity for the nucleus solver. Also, to break it up a bit more, you can add some turbulence to the volume axis field. I set mine to .2. Like in the previous example, you can add your ground geometry, make it

a passive collider, and set Stickiness to 10 so the particles will stick when they land. The final scene should look like **Fig.05** and **Movie 2**.

The final render can be seen in **Movie 3**.

**MIKE ZUGSCHWERT**

Web: <http://www.mikezfx.com/>

Email: [mzugschwert@gmail.com](mailto:mzugschwert@gmail.com)



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# BUILDING DROIDS



Characters are, of course, a popular subject for CG artists. However in this series we will be approaching creating characters in a slightly different way. Each of our amazingly talented artists will be provided with a 2D concept and technical drawing of a cool, sci-fi droid. They will then show us how to turn this 2D information into an accurate and exciting 3D model. Many techniques and approaches will be used throughout the series, which will provide all of us with a great opportunity to develop our own 3D skills.

## REPAIR DROID

## CHAPTER 04 – REPAIR DROID

Software used: 3ds Max

### INTRODUCTION

In this tutorial I am going to explain how I brought the repair droid to life in 3D and what kind of things we should take into account when modeling and texturing a character. This droid was designed by a 2D artist and I was provided with drawings from different angles (**Fig.01**).

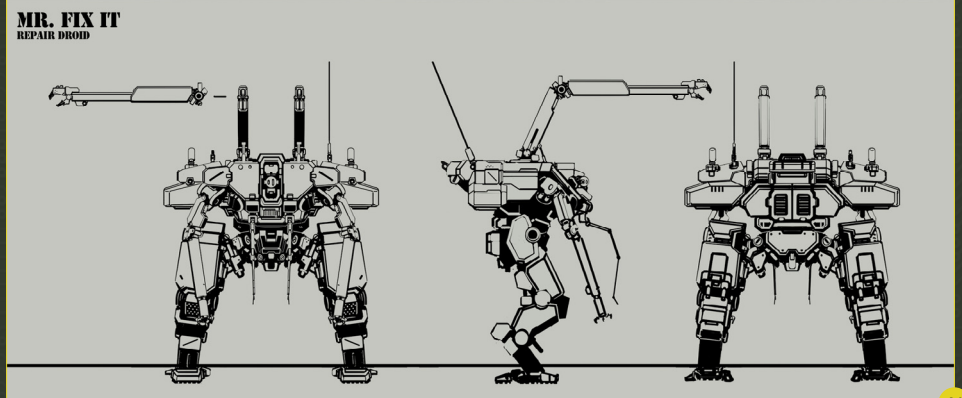
I made the complete model using 3ds Max 2009, and used V-Ray for the lighting and Photoshop CS4 for the textures.

### BASE MESH

First of all, I took my time to analyze the concept, shapes, proportions and his attitude. I asked myself, where is he? What are all those arms and what do they do? I ended up making a little resume of his existence in time and space, which is a good way of developing an in-depth understanding of the concept of a character. Once I had all this information in my mind I was ready to start creating him!

In 3ds Max I imported the front, side and back drawings first as references and started building piece by piece. I didn't pay attention to details at this stage; I only focused on the main shapes and proportions.

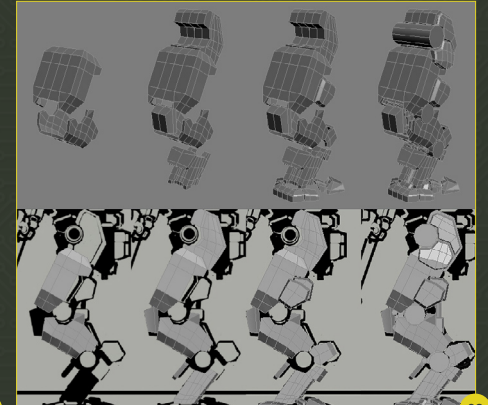
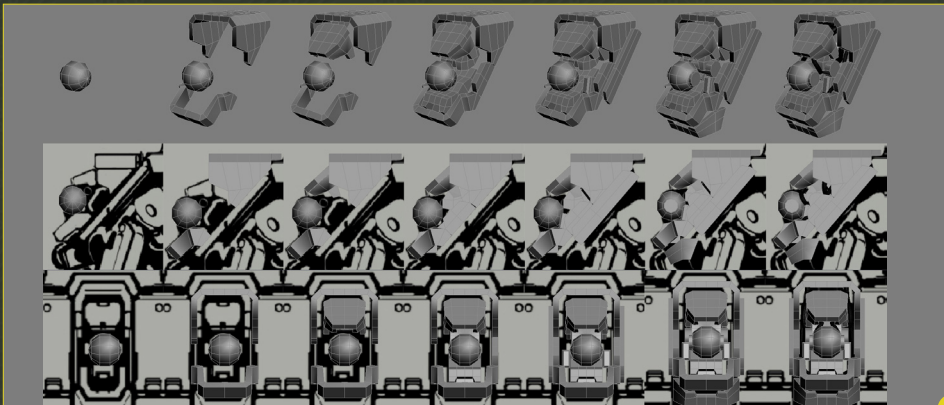
First, I am going to show how I made the head area. I created a sphere for his little head according to the reference, and then proceeded to make all the pieces around his neck and placed them correctly. I used lots of edge



connections, extrusions and bevels; with only these tools I made almost everything I needed for the whole model (**Fig.02**).

The same method was applied to make the leg. I created the main objects and placed them by

following the references. Simple cylinders were enough to show the joints. Remember that at this point, it was not important to add too much detail; the goal here was to end up with a strong silhouette for the character (**Fig.03**).



Following this process with each area of the robot, I completed the full model (**Fig.04 – 05**).

When the torso's turn came, I found it a little difficult to arrange the pieces in the correct way without deforming the figure of the body, so I made a quick mesh simulating his torso and put the respective pieces over it (**Fig.06**).

Since the drawing does not show some areas of his back very clearly, I designed them myself while maintaining his style. I also took advantage of some empty areas where I could include cables. When I had finished the entire base model of the droid, I moved forward to the next step, which was adding the detail (**Fig.07**).

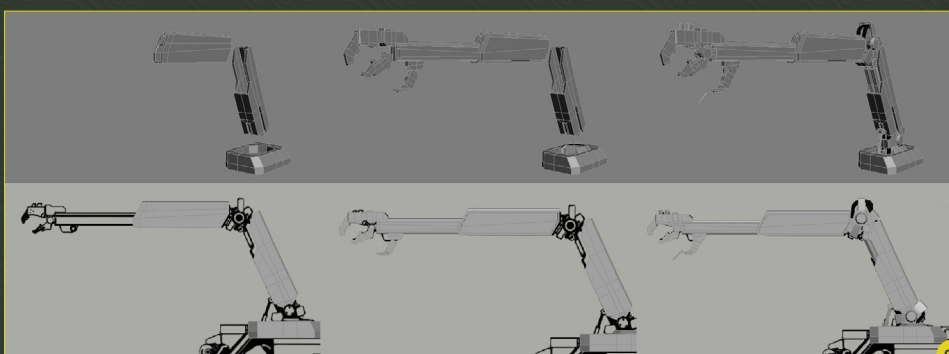
**Note:** Aiming for simplicity, creating general shapes and establishing a strong silhouette were the goals in this section.

## DETAILING

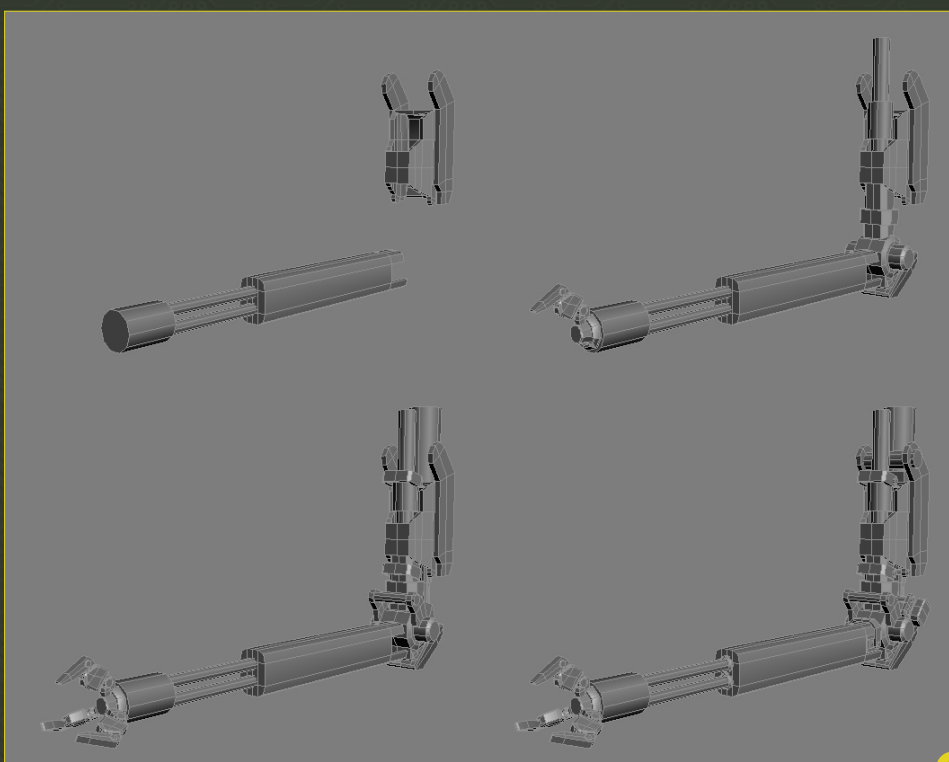
Once the base mesh was done, it was time to make the details of every single piece. I wanted the droid to look real and the more details it had the more real it would look. But what kinds of details should I make?

Well, this is when references took an important role in the creative process. By looking at reference photos of machines, I was able to find interesting details that I applied to my model, like lines to divide pieces or small holes - basically, details that would suggest the droid had been made in some kind of industrial process.

The details were made using more tools than the basic shapes, including edge extrusion, chamfers, bridge, weld and so on.



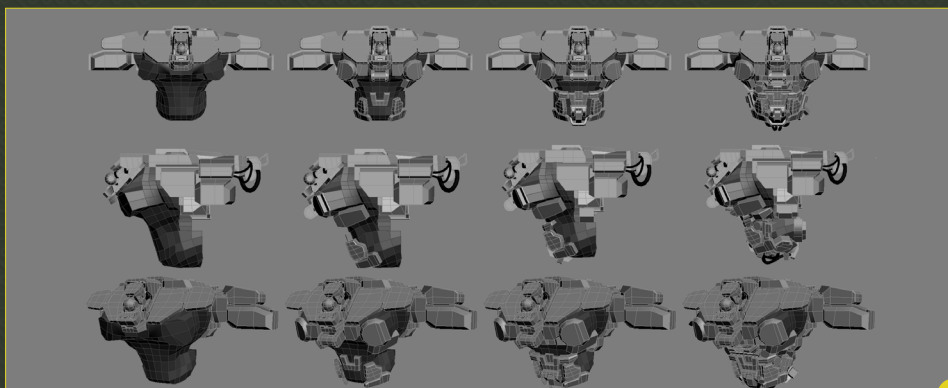
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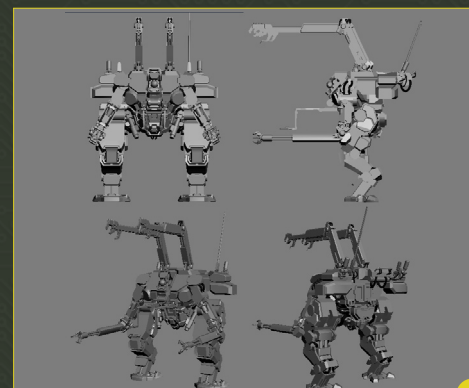
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Now I am going to explain how I made some of the principal pieces. Let's start with the one over the head. I took the base mesh I'd done for it and started by connecting some edges in the areas I need to. I then suggested the semicircular holes that were on the concept by selecting the respective faces and applying inset and arraying vertices.

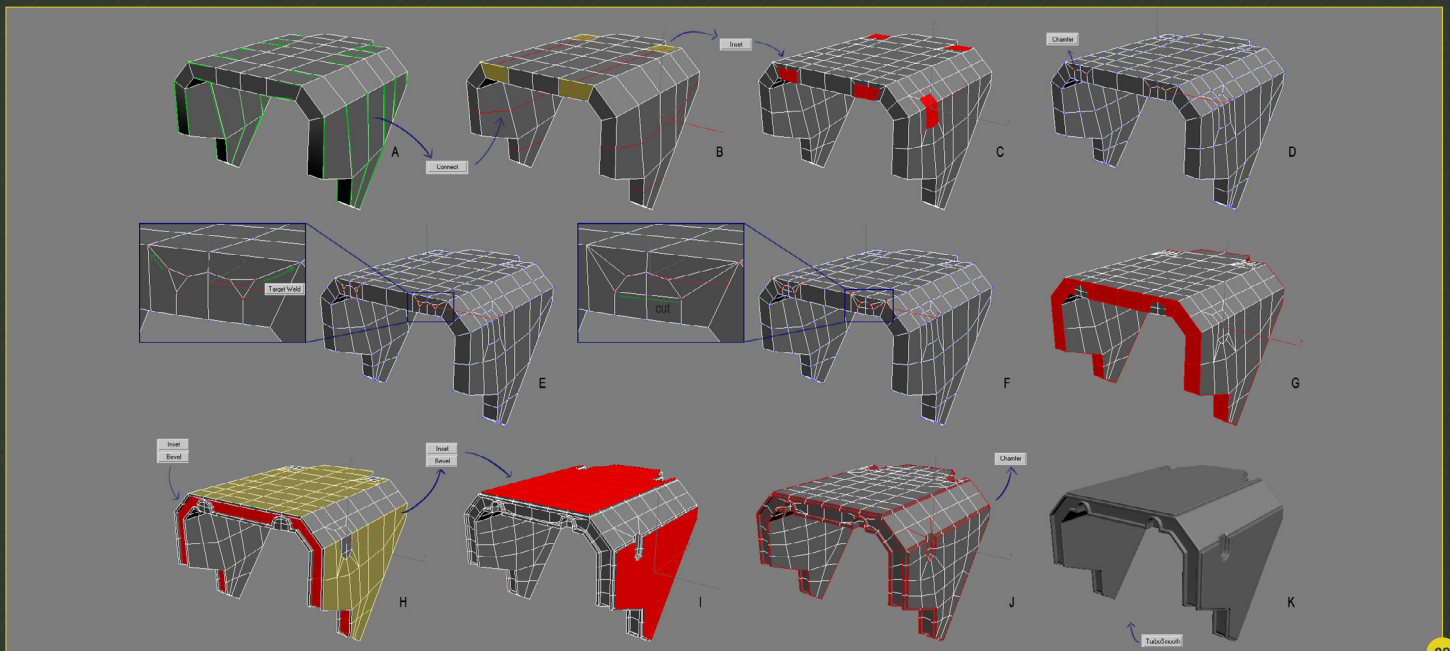
After that, I selected all the faces of the edge of the piece, applied an inset and extruded inward. At this moment I took some time to organize the mesh, making better topology, I then proceeded to select the faces on the top and side, and made a small inset and bevel to get the effect I saw in the concept. Finally, to add the TurboSmooth modifier I selected some



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edges and applied a very small chamfer for the modifier to work properly (Fig.08).

The majority of the pieces were made using this method and applying the same techniques (Fig.09).

Next I am going to explain some tricks I used in specific situations. For example, one of the pieces in the torso had some elongated holes.

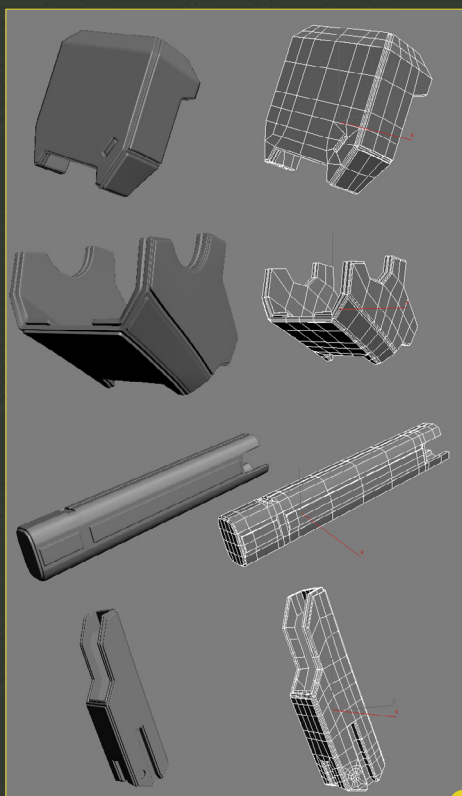
To make these, I started by building some kind of pattern with the shape of the hole. I then made some cuts in the respective faces of the piece, following this pattern, and with a combination of extruding edges, arraying and welding vertices I completed the entire section.

Finally, I selected the desired faces to extrude them and applied a small chamfer to some edges to give the piece a smoother finish. I

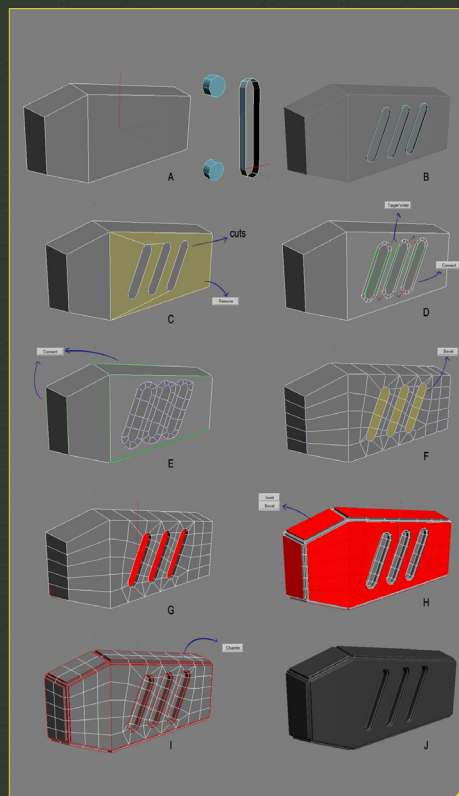
didn't use TurboSmooth for this one; I got the result I wanted with by using polygon smoothing groups (Fig.10).

I used this trick in a good number of pieces (Fig.11).

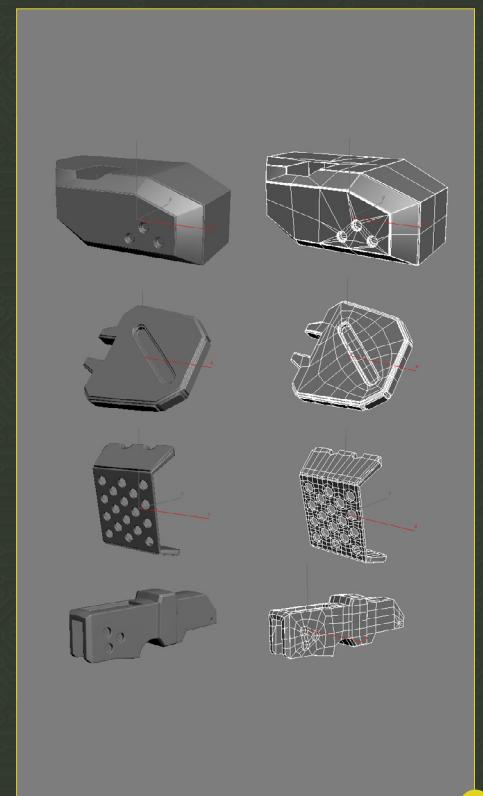
Since the style of this particular droid has a sharp finish, I only used TurboSmooth on some specific pieces (like the shoulders and



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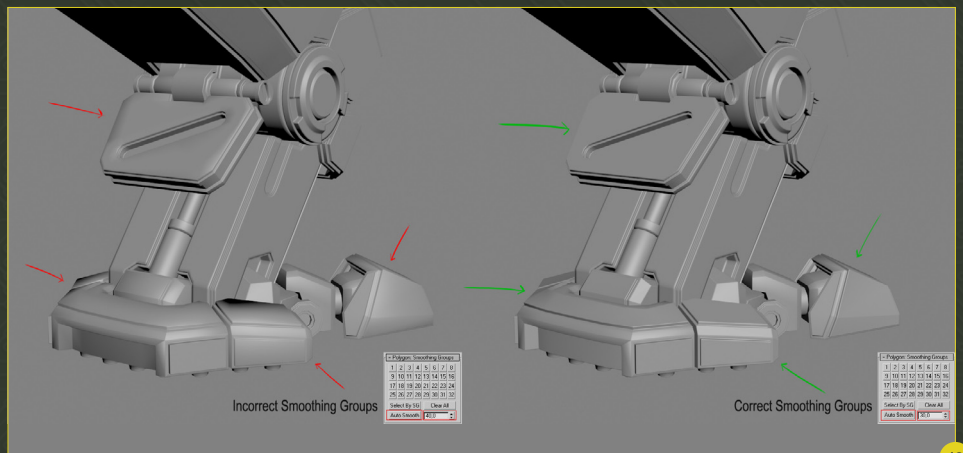
big joints); for the rest of them I used polygon smoothing groups. Using smoothing groups can be very tricky. I generally set them to about 30 or 35 and press the Auto Smooth button, but I really see the real effect when rendering, so I can always change any particular group manually in case I need it (Fig.12).

## TEXTURING

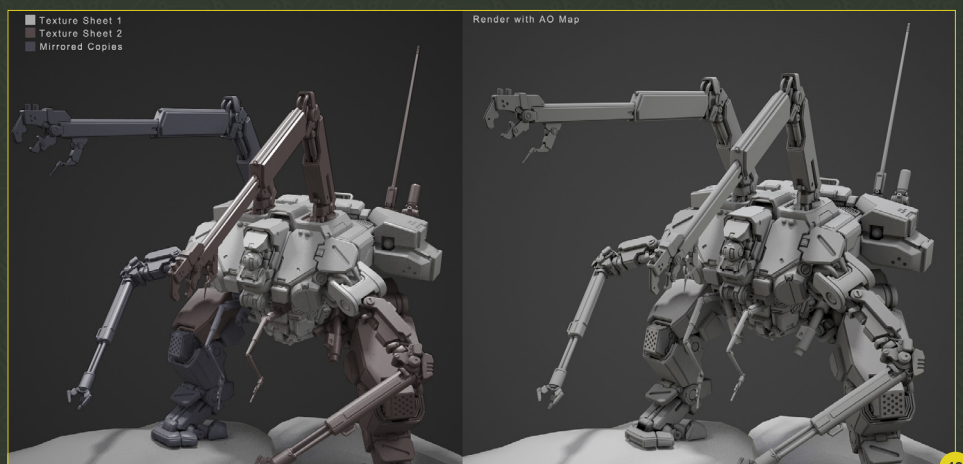
After the droid was completely detailed and finished, I continued to unwrap and pose it. I divided the droid into two maps of 4096 x 4096 each. The way to divide the maps is up to you; sometimes its better doing it by materials or colors, and sometimes its better by sections. In this case I decided to divide the maps by sections. I included the leg and all arms in one map, and the full torso in another one. I also baked an Ambient Occlusion map to have a better contrast (Fig.13).

The first thing I always do at the very beginning of the texture process is to set up the main colors. I painted yellow and gray in different layers and made some adjustments using Brightness, Contrast and Color Balance until I got the desired result. At that point I also included the "burnt\_05b" map from the Total Textures V19 – Destroyed and Damaged DVD to give him a nice metal feeling (Fig.14).

Since he is a repair droid I saw him in war, fixing the fallen units (as shown in the concept image). So, he has some damage because of the battles



12



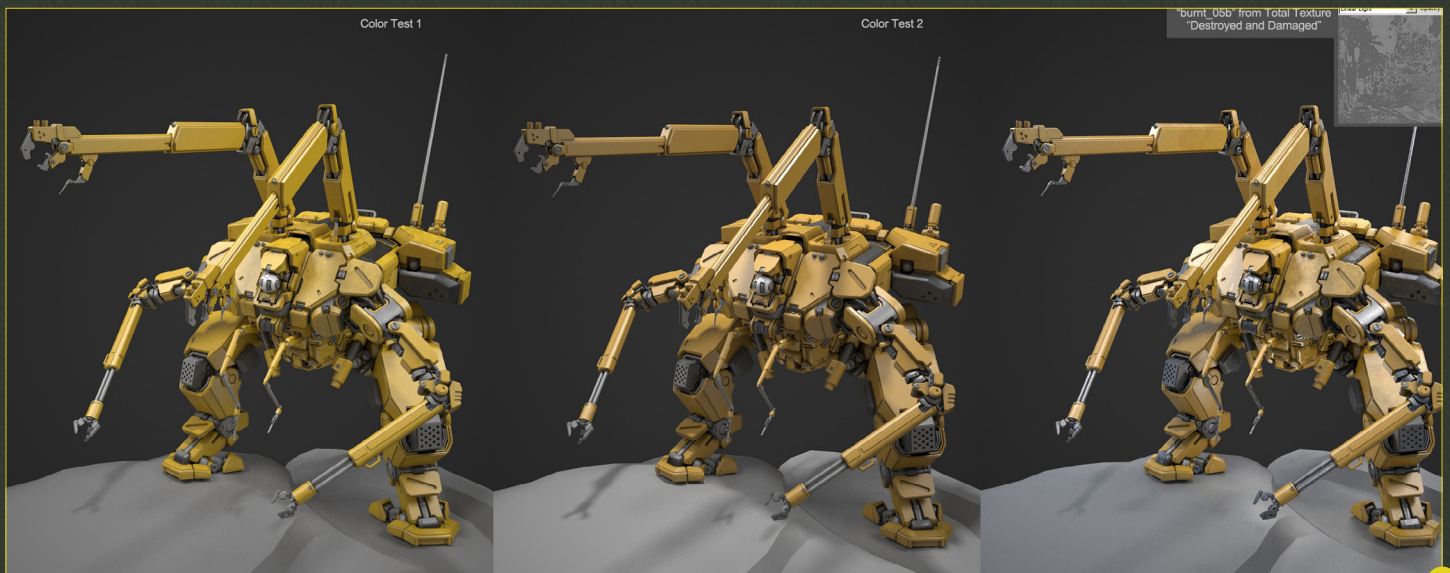
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nearby, but most of all too much rust and dust, given that he is not very well preserved.

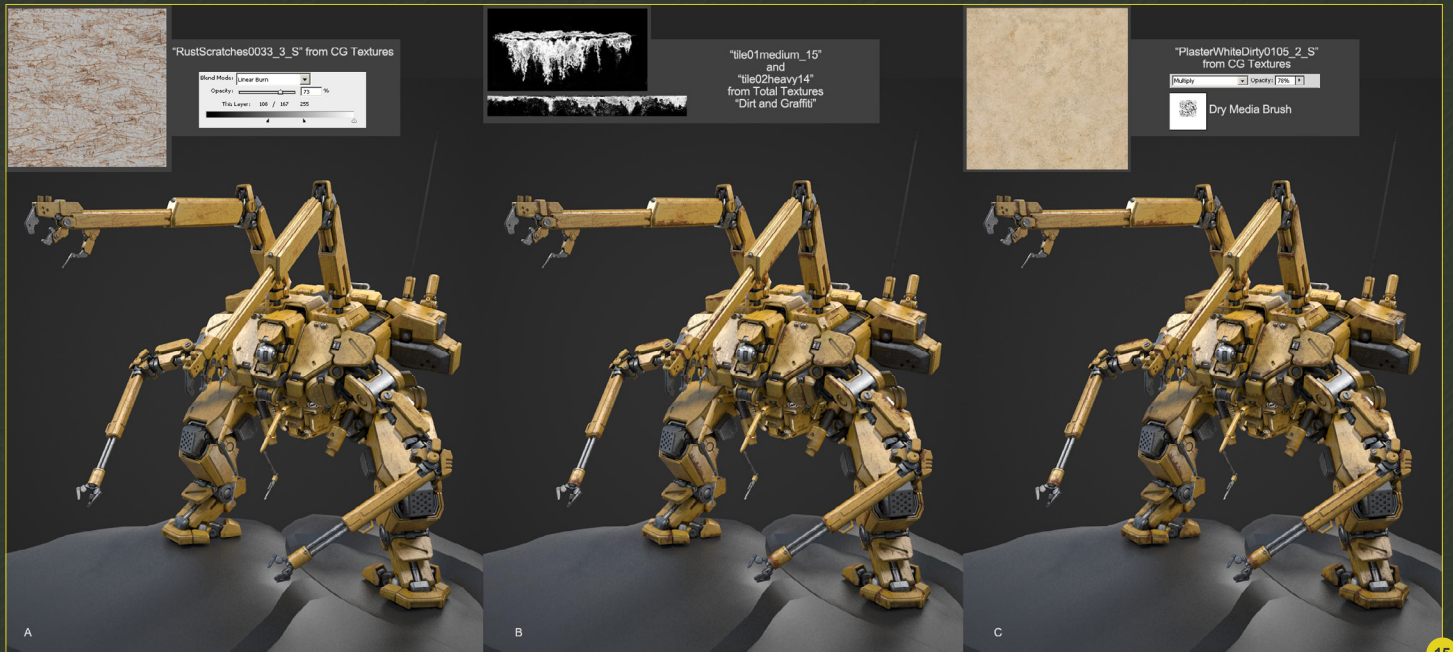
To achieve a general rusted and scratched look, in my repertoire of maps I found one called "RustScratches0033\_3\_S" from CG Textures, which worked perfectly for this purpose. I made some adjustments to the map, like changing the

blending options, brightness, contrast etc and then applied it.

To give a final touch to the rust I made a new layer filled with a red color (similar to the one in the scratches) and masked in the "tile01medium\_15" and "tile02heavy14" alphas from the Total Textures V05:R2 – Dirt & Graffiti



14



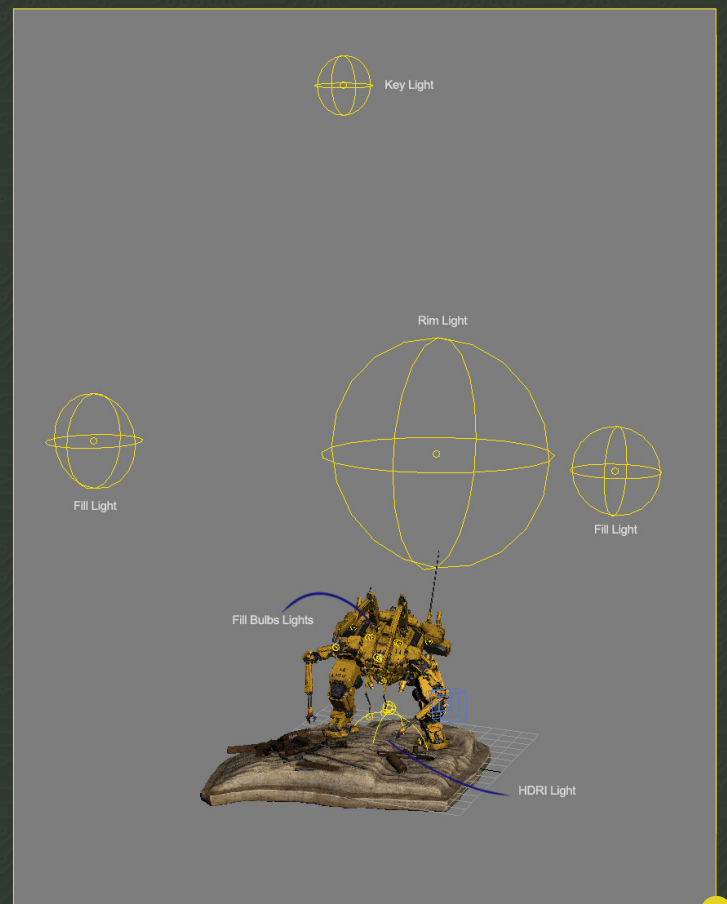
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16

DVD in areas where there would probably have been more corrosion. Concluding the dirt session, I added dust by masking the "PlasterWhiteDirty0105\_2\_S" map from CG Textures with a Dry brush; again making the necessary adjustments to make the map look like dust (Fig.15).

Finishing the diffuse, I added the text and hazard bars "symbol\_18" from the Total Textures V07:R2 – Sci-fi DVD and applied a trick to integrate these symbols into the texture, which was modifying the underlying Blending layer (Fig.16). Using blue I also painted small bulbs and his eyes, but in addition to this I



17

added some lights near the bulbs in 3ds Max to get a better result.

Talking a little about the lighting (Fig.17), I would like to thank my partner Eduardo Balestrini for helping me with this project by making the shaders and illumination for the



robot. He used a global HDRi with a key light and some fills around. He also, very kindly, sculpted the terrain for me.

To finish, I rendered out some passes with V-Ray for post-production (**Fig. 18a – e**), then in Photoshop I played with different blending modes and adjustments until I got the final image.

## CONCLUSION

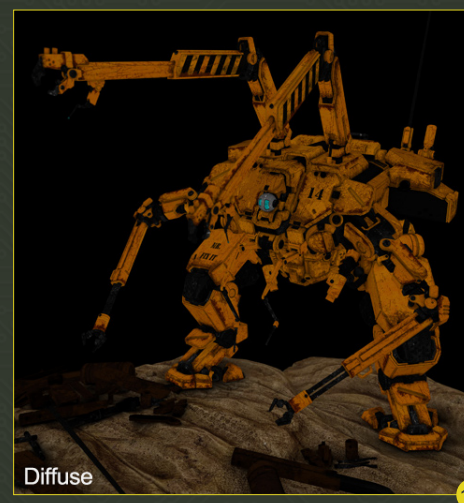
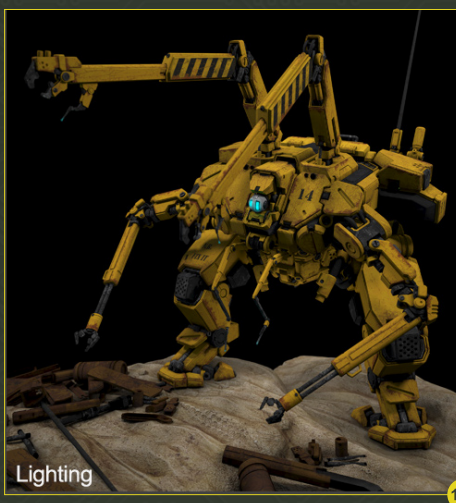
The repair droid has a very particular design, so it was very interesting to do. I really enjoyed making it, so I hope you like it and I hope this tutorial has offered you some useful tips for your future projects.

Thank you very much for taking the time to read this tutorial.

**VICTORIA PASSARIELLO**

Web: <http://www.vitru3d.com>

Email: [info@vitru3d.com](mailto:info@vitru3d.com)







**HUGO**

- RISE OF THE PLANET OF THE APES**
  - ANIMATOR: ROLAND VALLET
  - PIPELINE DEVELOPER: JOZEF VAN EENBERGEN
  - LIGHTING TD: KRISTIN SEDORE
  - EFFECTS TECHNICAL DIRECTOR: KEVIN MAH
  - LIGHTING TECHNICAL DIRECTOR: TAMIR DIAB
  - DIGITAL PRODUCTION ADMINISTRATOR: PEDRAM DARAEIZADEH
  - CAMERA TRACKER: WILL TOWLE
  - RIGGING LEAD: SERGUEI KALENTCHOUK
  - CG MODELER: HENRY SOUTH
  - DIGITAL COMPOSITOR: CHUN-PING CHAO
  - MATCHMOVE TD: HENRY PENG
  - CREATURE TECHNICAL DIRECTOR: HENRI TAN
  - PREVISUALIZATION SUPERVISOR: NICHOLAS MARKEL
  - CHARACTER MODELER: JELMER BOSKMA
  - ROTO ARTIST: CHRYSTIA SIOLKOWSKY
  - LEAD ANIMATOR: CEDRIC LO
  - LIGHTING LEAD: YUTA SHIMIZU
  - DIGITAL PRODUCTION ADMINISTRATOR: CHELSEA WHITTET
  - VISUAL EFFECTS TECHNICAL DIRECTOR: NUNO NISA PEREIRA
  - DIGITAL ARTIST: KIERAN TETHER
  - PIPELINE TECHNICAL DIRECTOR: BORAE CHO
  - MODELLING ARTIST: BRIAN ZHENG
  - ANIMATOR: REX FANG
  - ROTO/PAINT ARTIST: JOOYONG LEE
  - LIGHTING ARTIST TD: JUSTINE CODRON
  - EFFECTS ARTIST: BILL WATRAL
  - ANIMATION SUPERVISOR: AARON GILMAN
- HARRY POTTER AND THE DEATHLY HALLOWS: PART 2**
- TRANSFORMERS: DARK OF THE MOON**
- THE AVENGERS**
- THE ADVENTURES OF TINTIN: THE SECRET OF THE UNICORN**
- MEN IN BLACK III**
- THE TWILIGHT SAGA: BREAKING DAWN - PART 1**
- BRAVE**
- HUGO**
  - VISUAL EFFECTS COORDINATOR: SOFUS GRAAE
  - LEAD LIGHTING ARTIST/LOOK DEV ARTIST: JOSHUA HERRIG
  - EFFECTS TECHNICAL DIRECTOR: MIKE RHONE
  - LEAD ANIMATOR: DAVID YABU
  - DIGITAL PAINT ARTIST: DAPHNE DE JESUS
  - DIGITAL PAINT ARTIST: CESAR RODRIGUEZ BAUTISTA
  - STEREOSCOPIC PREP/ROTO ARTIST: ANNA TONRUNGROJ
  - TEXTURE ARTIST: JAMIE BOWERS
  - CG ARTIST: RICARDO GOMEZ
  - VISUAL EFFECTS ARTIST/CAMERA TECHNICAL DIRECTOR: LOUIS COX
  - LEAD ANIMATOR: STEPHEN KING
  - PREVIS ANIMATOR: CHAD MOFFITT
  - LEAD ANIMATOR: CEDRIC LO
  - RIGGER: ALAN FREGTMAN
  - DIGITAL COMPOSITOR: GEETA BASANTANI
  - CREATURE TECHNICAL DIRECTOR: CAROLYN WONG
  - LIGHTING TECHNICAL DIRECTOR: RICHARD SUR
  - PREVISUALIZATION ARTIST: JOSH LANGE
  - SENIOR ANIMATOR: AMY LU
  - INTEGRATION ARTIST: SAMSON WONG
  - MATCHMOVE ARTIST: SARA HILMARSDOTTIR
  - ROTO ARTIST: RAPHAEL SANTOS
  - COMPOSITOR: DAANISH WAIN
  - LIGHTING AND ASSET TD: BIREN VENKATRAMAN
  - ANIMATOR: STEPHEN KING
  - ANIMATOR: MATT WEAVER
  - LIGHTING AND COMPOSITING TD: JOHN ISKANDAR
  - ANIMATION SEQUENCE SUPERVISOR: NICK CRAVEN

2010, 2011  
ε 2012

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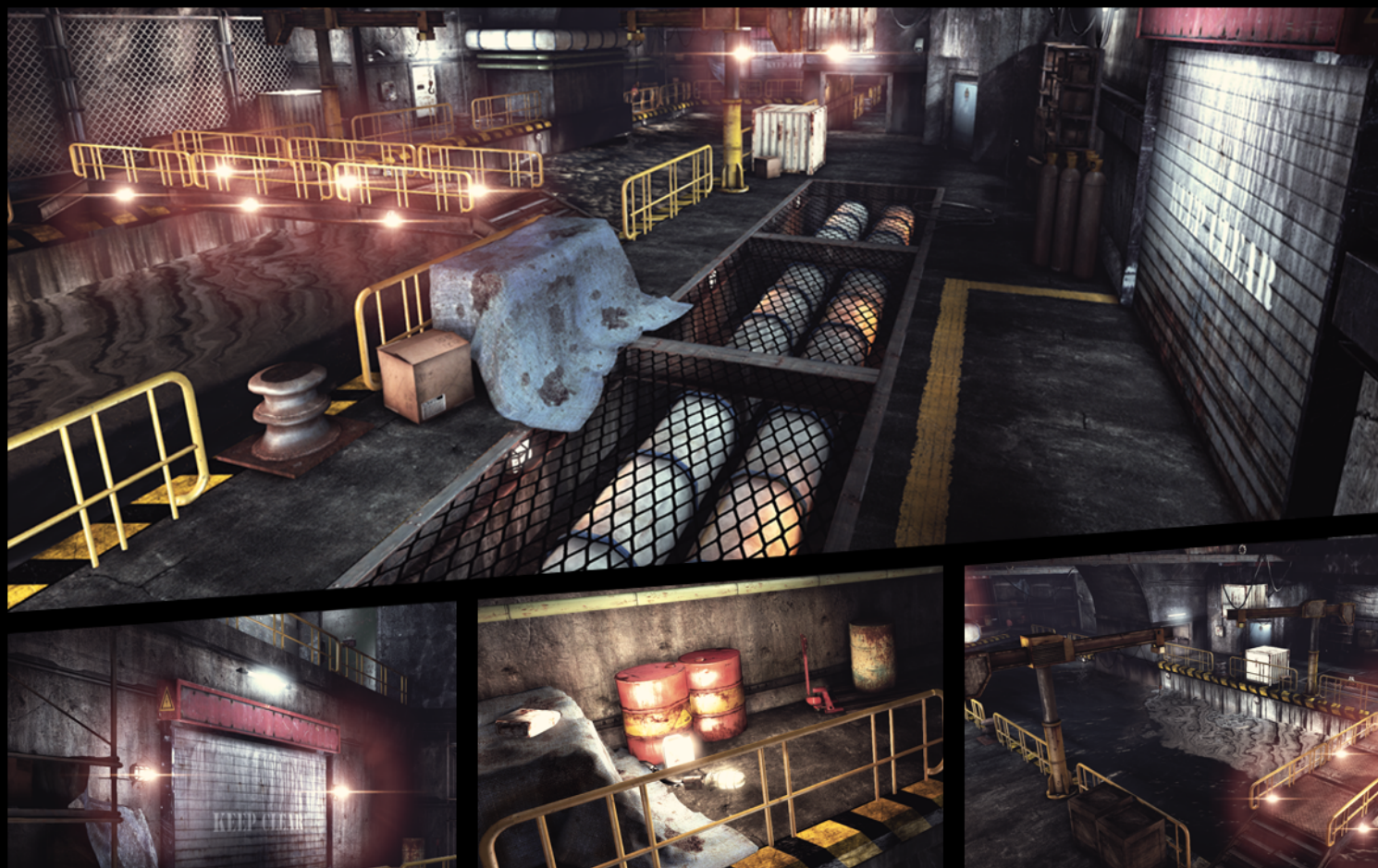
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In the modern world so many things seem to become popular and then disappear just as quickly as they arrived, however the games industry has proven itself to be ever present and continues to develop and thrive. For any CG artist the games industry continues to be the most obvious and abundant form of employment, but taking the step from a modeler to creating a games level at a professional standard is no easy task. In this series of tutorials industry professional Andrew Finch will be talking you through how to make a very cool playable games level using the Unreal Development Kit. Whether you are looking to create a cool portfolio piece or just looking for a fun project to try, this tutorial series is perfect for you.



# THE SUBMARINE PEN

THIS ISSUE Concept to White Box NEXT ISSUE White Box to Custom Meshes SEPTEMBER ISSUE 085 First Texturing Pass  
OCTOBER ISSUE 086 Building Objects and Placement 1 NOVEMBER ISSUE 087 Building Objects and Placement 2  
DECEMBER ISSUE 088 Details, Decals and Lighting JANUARY ISSUE 089 Finalizing Lighting  
FEBRUARY ISSUE 090 Final Polish, Particle FX and Post-Processes

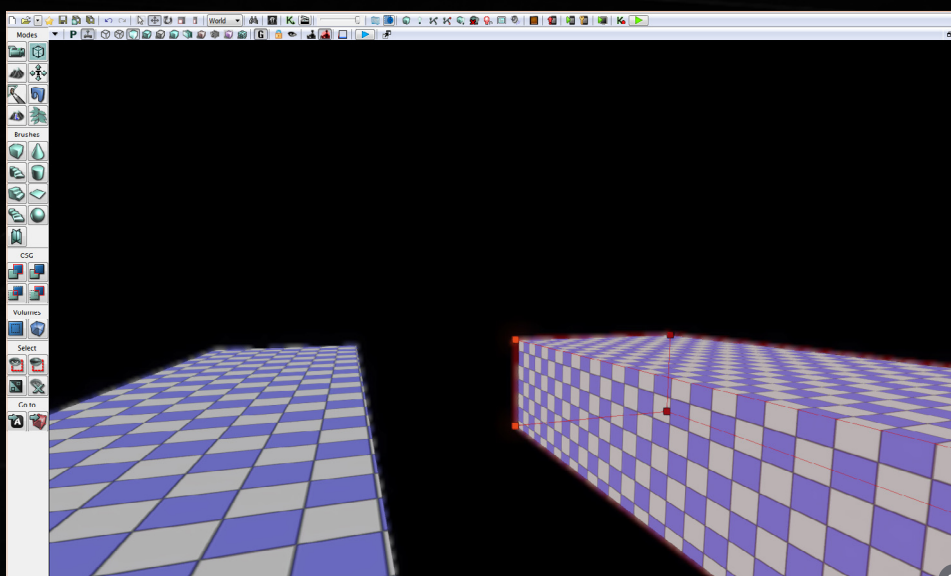
## CHAPTER 01 – CONCEPT TO WHITE BOX

Software used: UDK, 3ds Max and Photoshop

Hello, my name is Andrew Finch and I'm an experienced environment artist working in the UK games industry, currently producing my sixth title. I've always been interested in watching tutorials and observing how other people produce their art, to see the flow of their work and what went on behind the scenes of the finished image. I have found this helps to share knowledge and processes that can help to better your work. I also enjoy creating and writing such tutorials myself, so that I can hopefully inspire and help others to produce professional artwork and break into the games industry.

This tutorial will guide you through the creation of a submarine pen using UDK as the game engine. It is a more intermediate-level tutorial as I am assuming you already have some knowledge of the engine, such as building BSP geometry, building objects and placing lights. I will guide you through each step and make sure it is easy to follow. If you're just starting out and are looking for something that's a bit more of a beginner's guide, then I'd recommend checking out my previous tutorial: The Italian Courtyard (<http://shop.3dtotal.com/italian-courtyard-ebook.html>), which goes into more depth in terms of the tools and layout of the software. But if you're feeling adventurous, then give the submarine pen a try!

At the end of this tutorial you will be able to export textures from Photoshop and 3D assets (static meshes) from 3ds Max, and import them into the UDK game engine. You will also be able to set up a level in a way that will allow you to create a standalone program of your level and distribute it in your portfolio to future employers or even just to your friends. I will also cover lighting and post effects to really add polish to your environment, and make it stand out and look professional. This tutorial is much

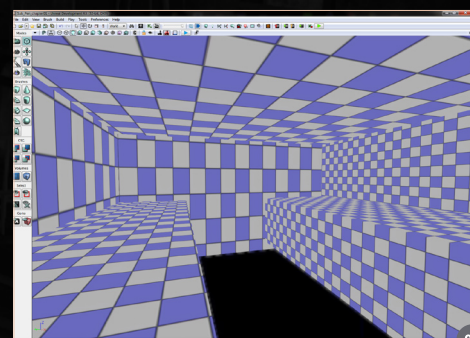


more about creating an overall environment than creating a polished, detailed object. I will be focusing on the bigger picture of creating a good composition, as well as demonstrating my process from start to finish on a project.

We will also be using 3ds Max, Photoshop and Crazy Bump to produce our artwork, and UDK to create and view the completed level. You can download UDK for free from here: <http://www.udk.com/download>

When I create environments I use various techniques to achieve the visual effects I want. Some people like to create everything from static meshes and not use BSP brushes at all. I tend to use a mixture of the two methods to create the final composition. However to start with I use only BSP brushes because it's so easy to change the size of our environment in no time at all.

I have a rough idea of what I want to achieve in this project so let's start by creating what we call a white box level in UDK. This is just a very basic blocked-out version of the environment. No detailed textures are applied; it's just simple boxed geometry. This provides us with a sense of the space and tells us quickly if it works or not as a scene. We can also make very quick changes if we need to so we can get the perfect space to work with. But the white box will not



be the final version of the environment – it will change throughout the whole process as we think of new ideas. This means we can adjust the geometry to suit our needs.

Using the box builder brush, create two cubes to form the platforms. They don't have to be perfect at this stage; a rough estimate in size will do. The depth doesn't really matter as the gap between the two platforms will be filled with water and we will eventually build a bridge across the water, allowing the player to fully explore the level (**Fig.01**).

Using the same techniques create walls, a ceiling and also the end wall. This provides us with a sense of the dimensions within the environment as we start to close the player in and create internal space. We will also start to see if there are any problems with the dimensions early enough to be able to edit them without causing too much re-working later on (**Fig.02**).

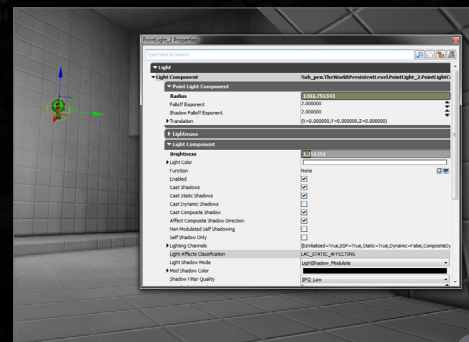
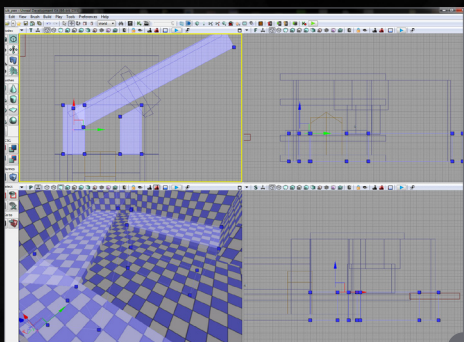
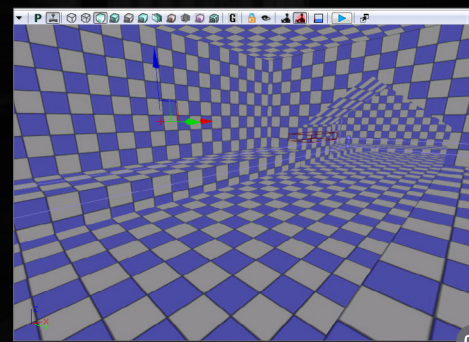
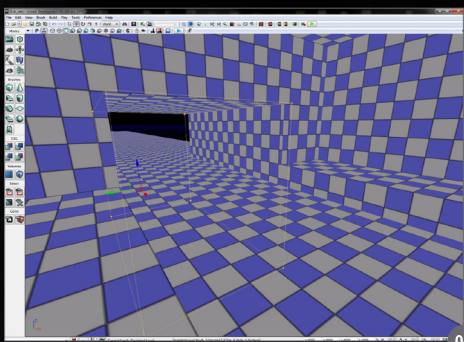
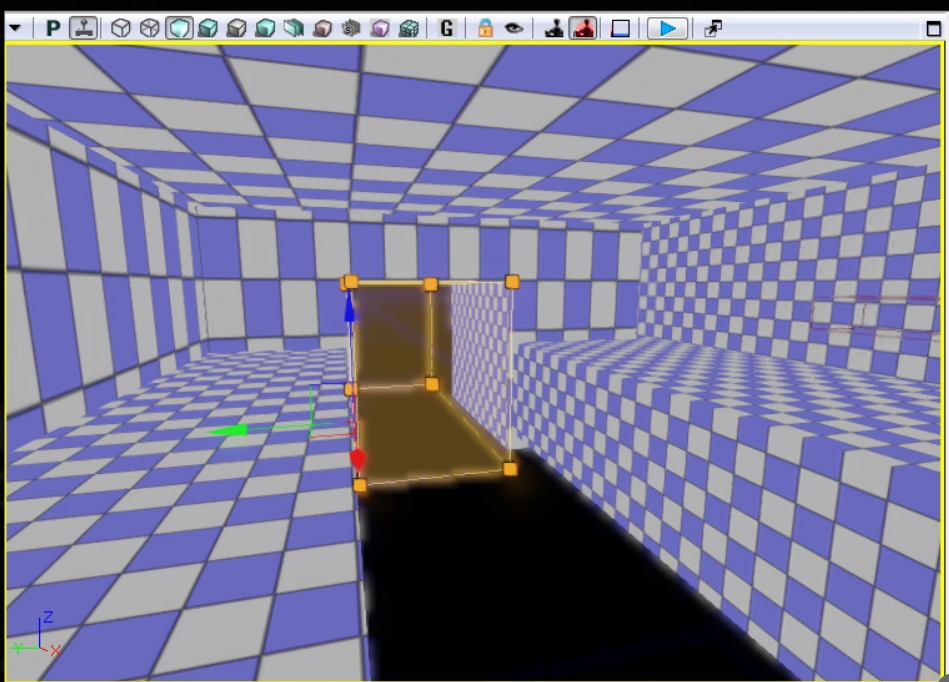
Using the same box builder brush, create an opening in the back wall. Instead of adding the BSP geometry, let's subtract it to create a very simple opening (**Fig.03**).

I've added a temporary plane to act as the water level. As you can see, the environment is now closing in around the player and using our imagination we can visualize what the finished level will look like. It is also a good idea to search the internet for reference images of places similar to this, and we can build simple boxes now and lay down the foundations for us to build on later on (**Fig.04**).

On the opposite end of the environment, cut out another opening. This time we want to add an extra edge to create an arch shape. Eventually we will build a real arch mesh to replace this BSP version, but for now this will do fine to aid our imagination in visualizing the finished artwork (**Fig.05**).

Behind the arch, build a smaller room with three smaller platforms – this will add something different to the environment and give us some great opportunities to create some nice details and points of interest. I've built part of this room at an angle to break up the straight edges; when viewed from the other room it will give the impression of a larger space and guide the viewer's eye around the environment (**Fig.06**).

With all the geometry now in place it is time to add some temporary lights so we can play our level and judge if the space we have created is in proportion. Place a few simple point lights throughout the tunnel – nothing advanced, just

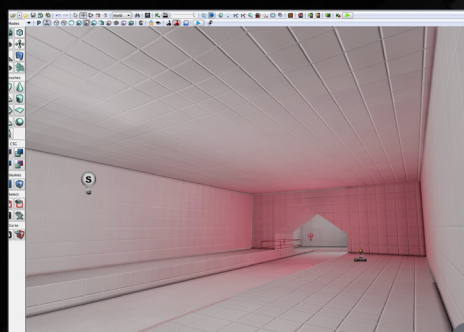


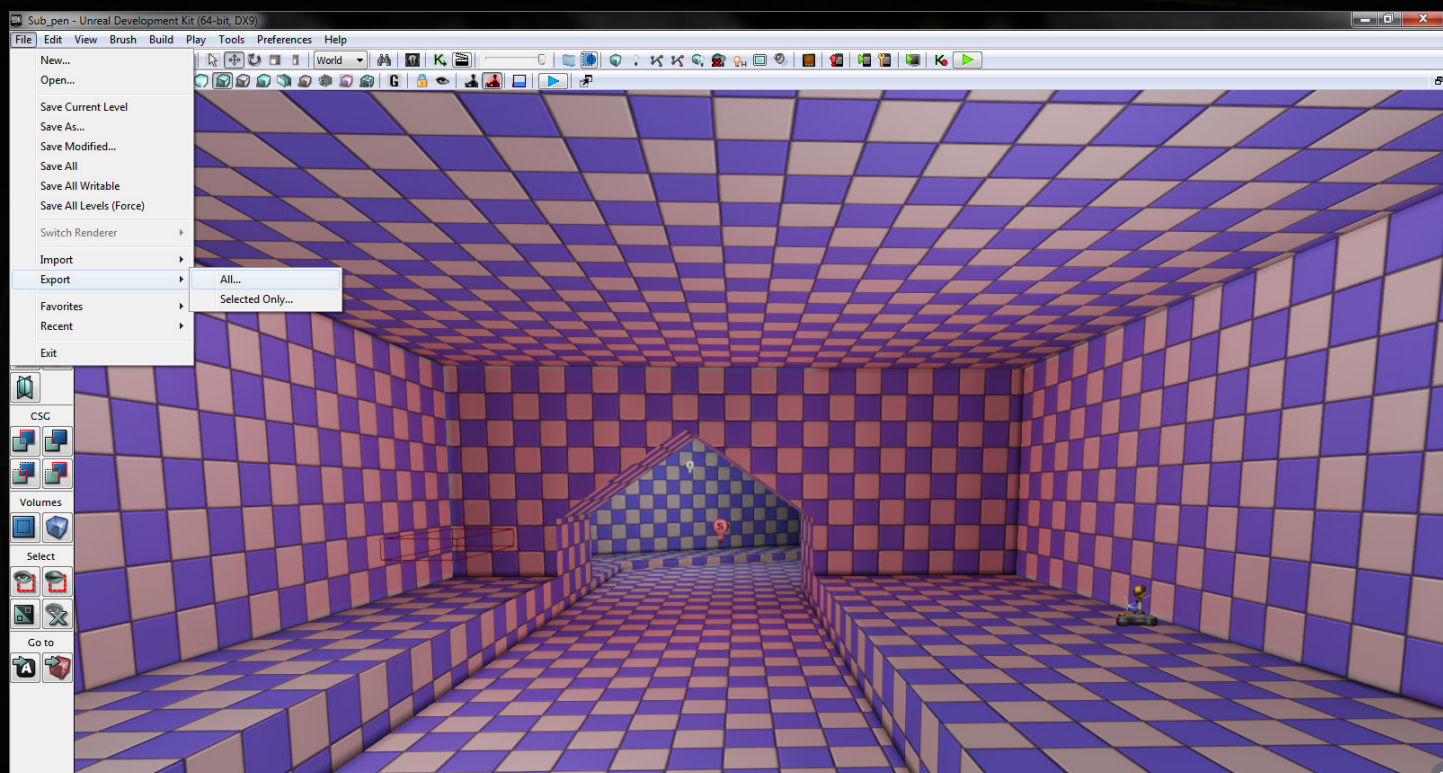
enough intensity for us to see where we are and with big enough radiuses to project light onto all the surfaces. Let's also switch off all the textures so they don't distract our imagination (**Fig.07**).

Add a red light near the archway, in part to break up the scene, but also to aid us in visualizing what we want to change later on in the project. We can also add a player start point on one of the platforms. Now if you play the map

and walk around the environment you can start to see if what you have is correct in dimensions and feels right. At this stage it is really simple to correct any errors. I'm quite happy with what I have now and I would consider this white box complete (**Fig.08**).

Now that we are happy with our environment's size it is time to export the geometry into 3ds Max so we can chop the geometry into sections or "modular pieces". We can then detail these





modular pieces, texture them and re-import them back into UDK. Simply select File Export > All.... and this will export the BSP geometry in .OBJ format, which is readable in most 3D packages (**Fig.09**).

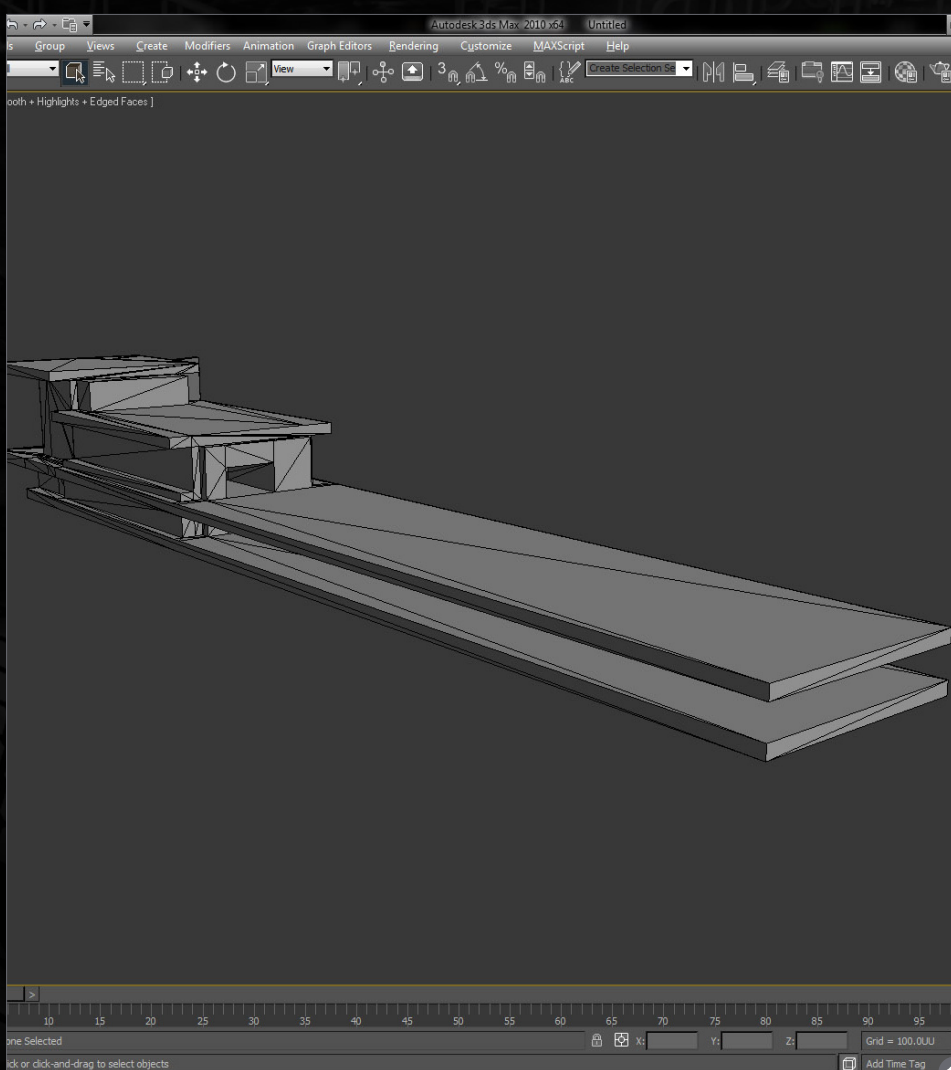
With a new scene in Max, open File > Import and locate the .OBJ that was exported from UDK. An import window will appear with a few options. Leave all of these as default and select Import. Now that the white box mesh is in 3ds Max as one solid object, we can use the modeling tools in Max to break up this object into workable sections (**Fig.10**).

I have added the exported .OBJ file to this tutorial so you can view it and play around with it. In the next chapter I will guide you through how to use the exported mesh to create the static meshes and start adding the first details to the level; this will really start to bring the environment to life.

Until next month, thank you for reading!

ANDREW FINCH

Email: [afinchy@gmail.com](mailto:afinchy@gmail.com)





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# CHARACTER PRODUCTION



Over the last couple of years, modeling realistic 3D heads and busts has become really popular. In this series we will be shown how to do this using 3ds Max, Maya and ZBrush. From the basic head model and a highly detailed head sculpt, through to texturing and post-production, our artists will cover every aspect of the creation process, providing us with the perfect opportunity to learn from their experience.

APRIL ISSUE 080 Low Poly Modeling    MAY ISSUE 081 Modeling the Features    JUNE ISSUE 082 Unwrapping

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## CHAPTER 04 – TEXTURING AND SHADERS

Software used: 3ds Max

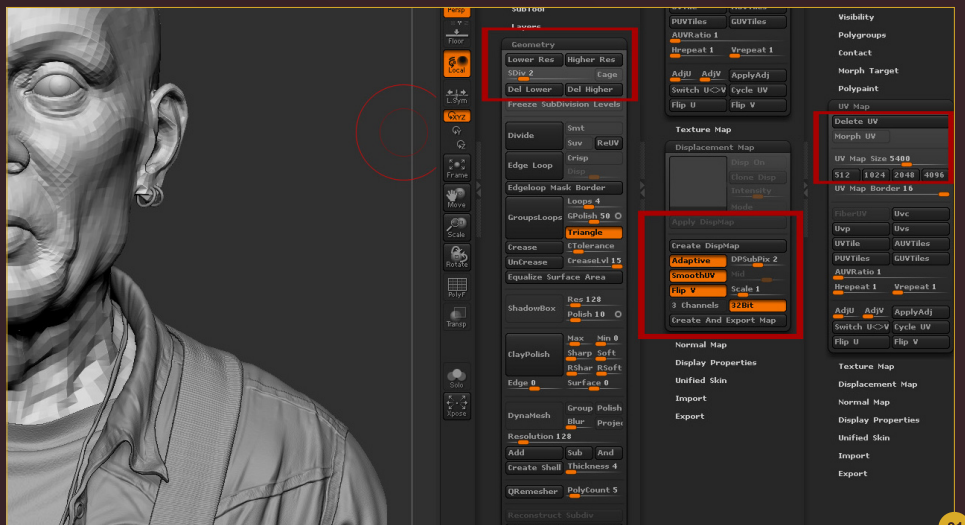
All my pieces are done, UV'd and detailed in ZBrush, so I can now start the texturing and shading parts.

The first thing I do is create a Displacement map for all my objects in ZBrush. I select a lower division, in this case division 2, and select the size of the map in the UV map panel. Then, in the Displacement map panel, I turn on Adaptive, SmoothUV, Flip V and 32-bit, and click on Create And Export map (**Fig.01**).

I use the same settings for all my objects, this way my 3ds Max scene won't be too heavy and the Displacement map will show all my details during my renders in 3ds Max and V-Ray.

For the texturing of the face it's pretty simple. I take some skin detail from a photograph, making sure it's nothing crazy as I just want to have some grain on my texture and no predetermined details (**Fig.02**).

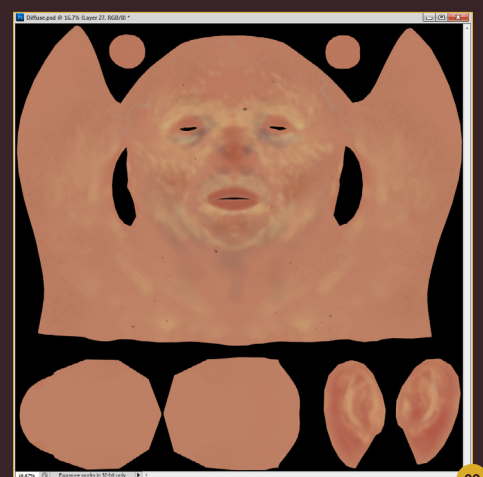
For the next part I turn off the layer the skin is on, for now, and start painting by hand all the different colors I want to see on the face. These include some dark blue for the eye bags, some reds on the nose, ears and cheeks, some dark skin marks, and some yellow where the skin is



01



02



03

close to the bone and the parts where the skin has some compression (**Fig.03**).

The next set of colors are for the areas where the hair grows, and I put some dark greenish colors where the beard and the hair will be. I add some red veins on the nose, corner of the

mouth, nostrils and around the eyes (**Fig.04**).

I also add some more small dark touches all over the face; I see them as small sun marks (**Fig.05**).

When I have all the colors in place I turn the skin layer back on and start combining everything



04



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06



07

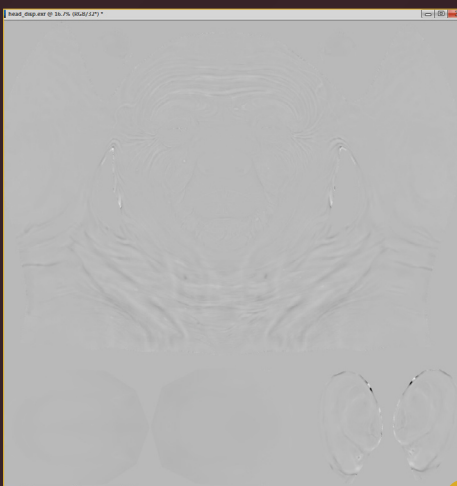
(color mode, multiply, etc) (Fig.06), I then apply my AO map. In this case I've created the AO with xNormal, but you can use ZBrush or any other software that creates AO maps – detail isn't important.

I don't want too much black or too many details in my diffuse texture; I just want some shadow in the nostrils and around the eye. I even paint them by hand sometimes to go faster (Fig.07).

I also like to use my Displacement map to get some very subtle details. I always save my Displacement map as an EXR file (Fig.08), make a copy of it and apply an auto level (Ctrl + Shift + L) to boost the detail before adding it to my Diffuse map (Fig.09). I then spend some time adjusting everything together, reducing the saturation to get a softer look, adding the neck tattoo and I making sure that my greens, yellows and reds are still showing (Fig.10).

Once my diffuse texture is done I can start working on my next two important maps: Specular and Gloss. My Gloss map is where the reflection will be tight, like on the nose, around the eyes, the lips, etc (Fig.11). My Specular map will control where the skin is more or less reflective; the greasy parts of the face will tend to be brighter and I add some pore variations to have more break-ups (Fig.12).

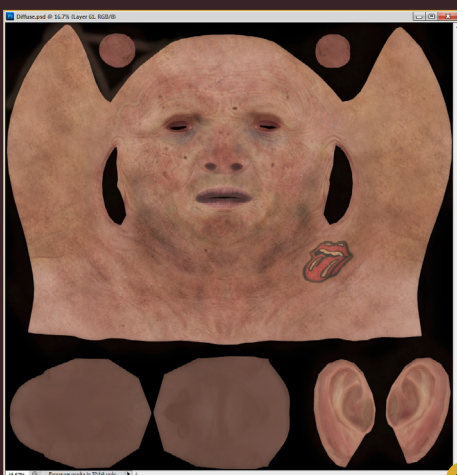
One thing I really love about V-Ray is that you don't need to have a ton of textures to get a



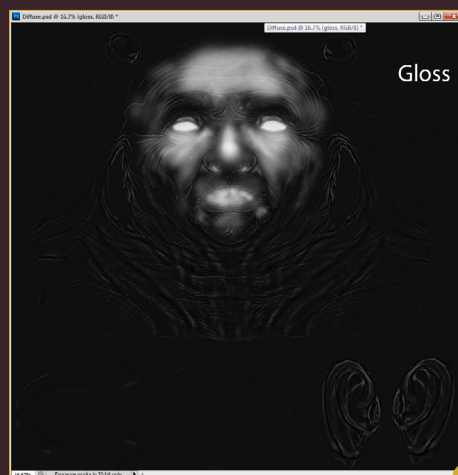
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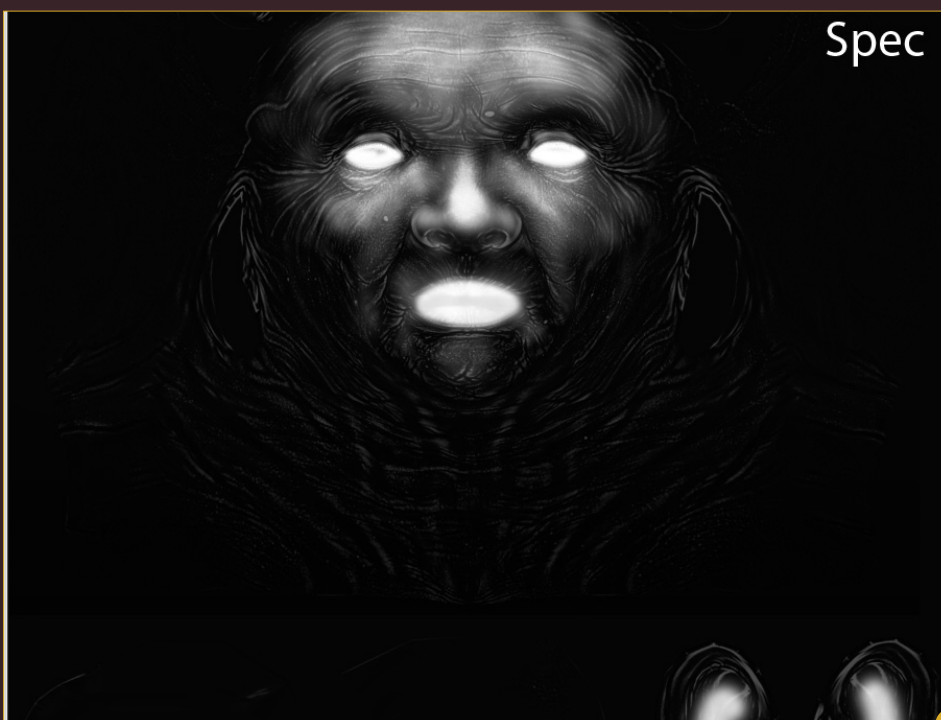
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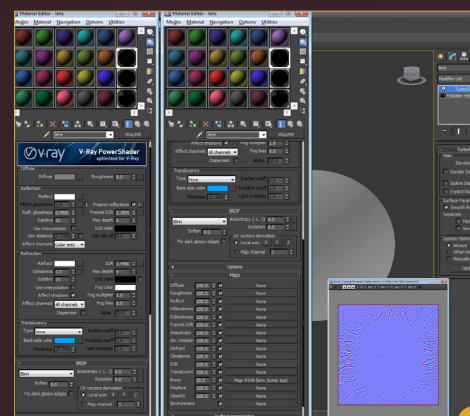
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12

nice looking skin shader. With only a Diffuse Specular map and a Gloss map you can have some very cool-looking results.

The rest is more about tweaking the values of the shader and adjusting them until you get the result you want.

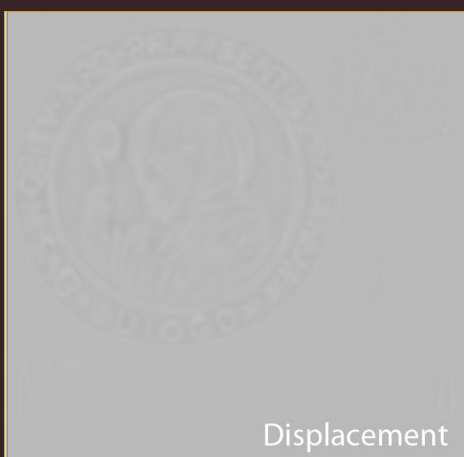


In 3ds Max I select a V-RayFastSSS2 material, plug my Diffuse map in the SSS color, my Specular map in Specular Amount and my Gloss map in the Specular Glossiness. To get all the details on my model I apply a TurboSmooth to my model and a V-RayDisplacementMod on top. When importing the Displacement map to the modifier I have to make sure the 2D mapping is selected (**Fig.13**)

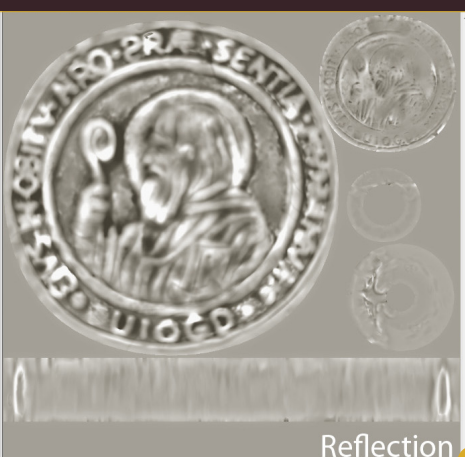
You might wonder why my Gloss and Specular maps are mostly black; the reason is that it allows me to have more control over the maps inside 3ds Max. Instead of plugging in my maps directly, I put them in two different composite materials, then put them on layer 2 (top) and put in Screen mode on layer 1. I only put a gray color on. By doing this only the bright values of my maps will be added to the gray color I select.

Now with this composite material, I can just change the value of the gray color to get the result I want without having to go back to Photoshop every time I want to adjust their brightness. You can also use the same logic on the diffuse and make it darker, brighter, etc. For the shader itself, what's important to adjust is the Specular Subdivs; you will need a big number if you want to get nice reflection results.

The other values that you will play with a lot will be the Scale value and the Phase function. The scale should normally stay at 1 if everything is to scale, but increasing the value will scale the subsurface scattering radius and give some interesting results.



Displacement



Reflection

The Phase function determines the general way light scatters inside the material. Having a positive value will have the light scatter mostly forward from the direction the light comes from, whereas a negative value will have the light scatter mostly backwards. Most of the values I'm using here are the result of trial and error and based on the look I'm aiming for.

I'm using a copy of the same shader for the eye ball, but with a bigger SSS effect, and I'm using a transparent V-Ray material for the lens with a Normal map on it to have some bumps on the veins (**Fig.14**).

The head and eyes are now ready, but before jumping onto the hair and clothes, I want to finish the medals. I have no Diffuse or Gloss maps for the medals, only a Displacement map applied on the model and a Reflection map made from the Displacement map (**Fig.15**).

Again I just make a copy of the Displacement map, apply an auto level and made it a bit

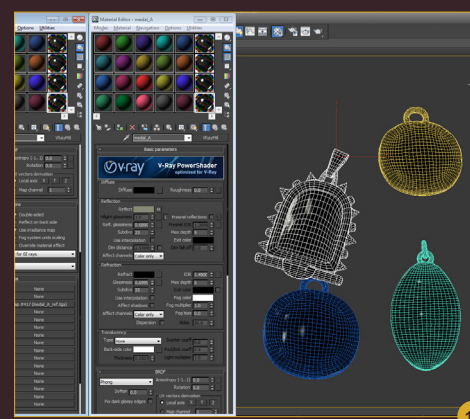
yellow to give a yellowish tint to the medal. In 3ds Max I apply a V-RayDisplacementMod, plug in the Displacement map and apply a simple, metallic-looking material (**Fig.16**)

The head, the eyes and the medals are done – next step, hair and clothes.

## RODRIGUE PRALIER

Web: <http://www.rodriquepralier.com/>

Email: [rodriquepralier@hotmail.com](mailto:rodriquepralier@hotmail.com)



# CHARACTER PRODUCTION



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## CHAPTER 04 – TEXTURING AND SHADERS

Software used: Maya, ZBrush

In the last tutorial we made all the necessary preparations for texturing, by unwrapping the model so that we have clean and readable UV coordinates. That way we can be sure all the details we draw in to texture will wrap around the model properly.

The best way to start any texturing project is to conduct a good search for reference images. You can start with the well-known [www.3d.sk](http://www.3d.sk) reference site or just browse Google for some faces that you like. Sites like [www.facity.com](http://www.facity.com) can provide you with hundreds of useful face images from all around the world. To use these references easily, compose a collage of your favorite images in one file.

There are many ways to achieve believable surface details, but the most intuitive way for me is by sculpting surface details in ZBrush. Although we have finished modeling, shaping and even UV mapping, it's never too late to review your model once again, so feel free to do so if you think it needs any improvements.

I could share with you some standard ZBrush brushes I use on a daily basis, but let's see how you can make one all by yourself. In the next few steps I will describe how you can make a realistic skin pore brush, so let's jump to ZBrush.

Make a new ZBrush document with a size of 1024 x 1024.

In ZBrush 3D meshes you will find a simple polygonal plain. Drop it on to the canvas and press Make Polymesh 3D, then subdivide the plane six or seven times to ensure they'll be enough mesh density to receive pore details.

From the Brush palette choose Standard brush. Change the stroke to spray, and pick alpha 47.

Frame the model to fill in the canvas. You can frame in any spot on the plane or the entire plane, it's up to you. Press Alt and swipe the whole visible area of the plane with this brush to make it look really noisy (**Fig.01**).

Now go to the ZBrush Lightbox menu and from the brushes folder, scroll right to the Smooth brushes where you will find the Smooth Peaks brush. Use the Smooth Peaks brush and swipe all over the noisy area once again. The surface that you achieve this way should look a lot like orange peel or cheek skin.

In the Alpha menu, choose Grab Doc and save the captured alpha as a PSD file. The saved alpha image stores depth information and once loaded to the Standard brush with a rectangular stroke, it will be valuable in detailing the skin.

Before applying all these high frequency details, let's concentrate on some larger forms, like

wrinkles and folds. Now would be a good time to study the references you gathered earlier.

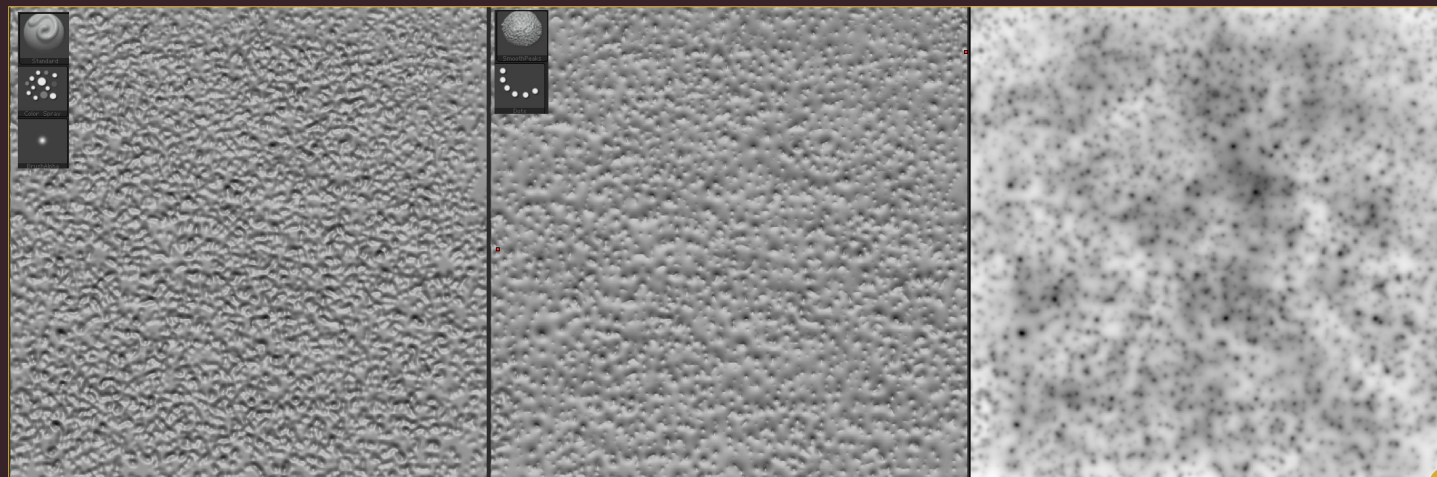
Loading images in Spotlight is the easiest way to use references side by side with the model. All you need to do is load the image using the Texture menu and press Add To Spotlight. Spotlight is very easy to use and all the options will be self-explanatory. Lastly, go to the brush settings and under the Samples tab, turn off Spotlight Projection.

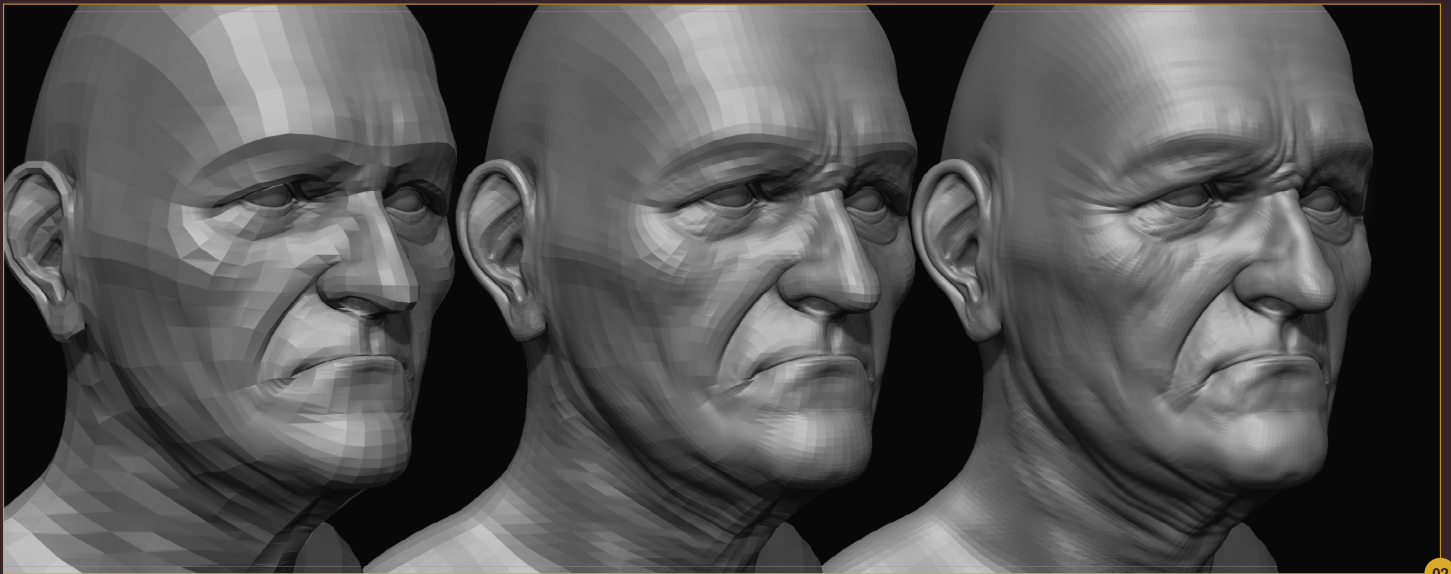
Now it's time to load the object file exported from Maya. Go to the Tools menu and import it, then drop it onto the canvas and press T.

In order to start adding details, we have to subdivide the model a few times to get a denser mesh. The dividing process tends to smooth the mesh significantly and to prevent losing any mesh volume you must store a morph target before adding divisions. After achieving the wanted level of divisions, press Switch in the morph target tab to regain the original volume.

The next task is to emphasize the shapes you already modeled in the mesh and add new shapes like skin fold and wrinkles. I like to use the ClayBuildup brush with alpha 48, and for fine wrinkles I use the same brush with the LazyMouse option.

The best advice I can give you at this stage is to be patient and don't rush to the highest





02

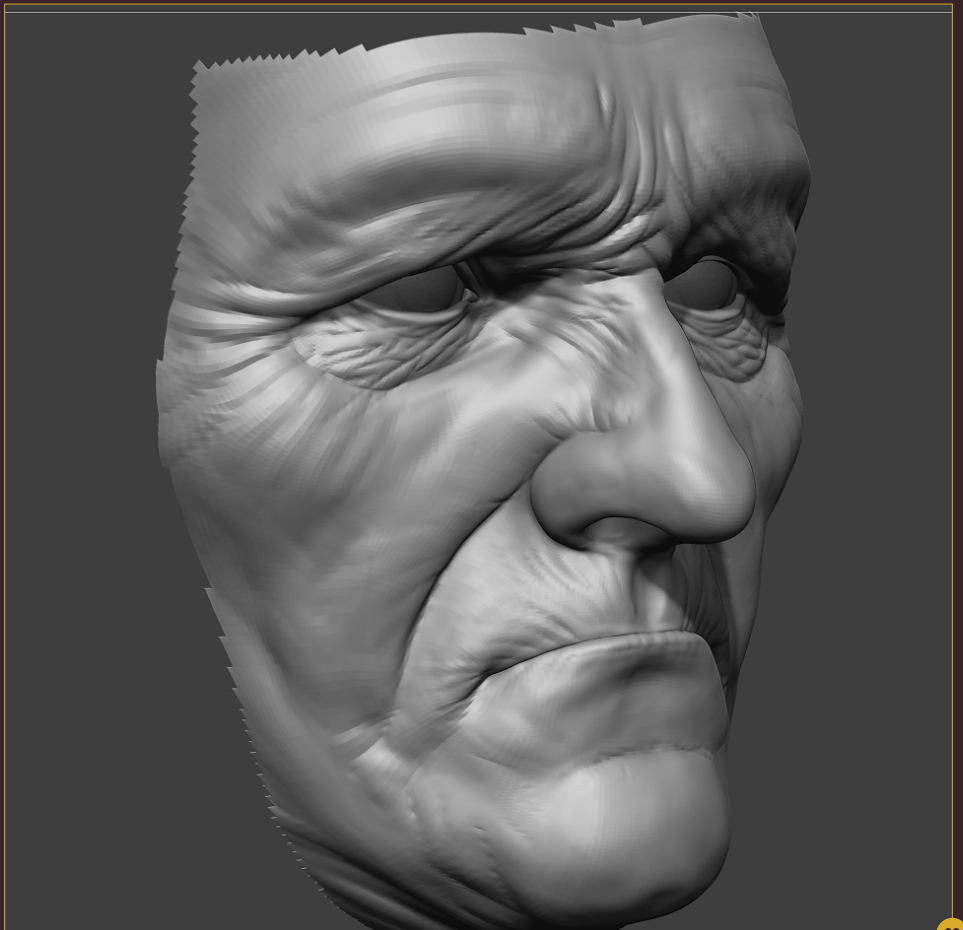
subdivision level, as long as your current level has enough resolution to describe your strokes. Also keep your eyes on the references. You don't have to invent new skin folds or wrinkle patterns – nature has done it for you. All you have to do is to copy what you see. Observation is the key.

**Fig.02** illustrates my result after half an hour of doodling with the ClayBuildup brush on the third subdivision.

As you can see there are not any major changes to the volume of the model and all added details are a thin layer on the surface. The wrinkles you add at this stage will guide you through the rest of the process, so step up to the next subdivision and continue defining those details.

Don't neglect any part of your model and make sure all your details are at the same stage of development on all areas of the model. You should have enough resolution at this time to start cutting in wrinkles and the best brush for that task is the Dam\_Standard brush, an brush that pushes and pinches geometry at the same time. **Fig.03** illustrates detail cuts achieved with the Dam\_Standard brush.

All of these details so far are on the fourth subdivision and since I feel like the mesh resolution does not support any finer details, I



03

step up one division. The subdividing mesh will most certainly wash out some of the lines, so you will have to go over all the mesh and define those details once again, by using the same techniques as before.

As you can see by now, sculpting details is all about layering through subdivision and the best

advice I can give you is to stay cool and don't rush for the multimillion polygon count too soon.

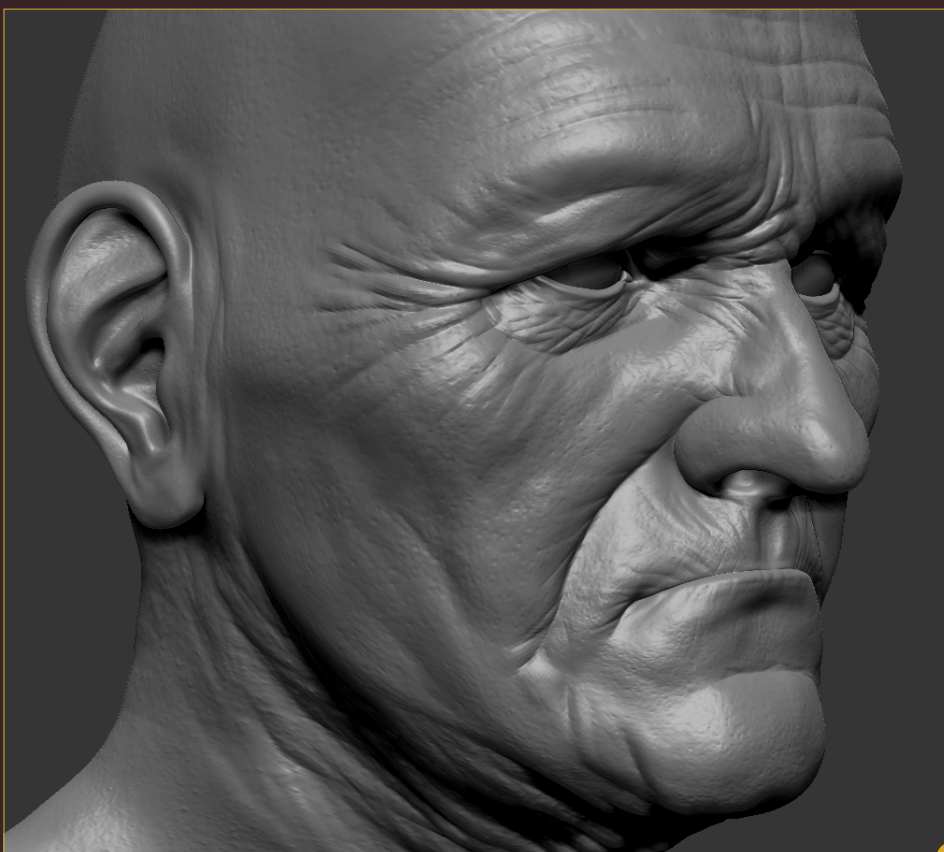
Now it's time to use that skin pores alpha we prepared at the beginning of this tutorial and set up a pore brush. Select the Standard brush from the Brush palette and change the Stroke to DragRect. Go to the Alpha palette and import

the earlier prepared alpha. In the Alpha Modify menu change RF (Radial Fade) from 0 to 15 and the pore brush is ready. As a last step, change the Smooth brush to Smooth Peaks.

You can start adding pores at the fifth subdivision level, with subtle Z Intensity (about 10) and cover your entire model. Dragging the pore brush on the surface will give you direct control over the location and size of pores. You can also use it with Alt pressed to achieve the opposite effect. If you feel like you've overdone it on some areas, use the Smooth Peaks brush.

**Fig.04** shows my result on the fifth subdivision. For the final detail, divide the geometry once more to get a final, sixth level of subdivision with approx 3-4 million polygons. You can go for an even higher poly count if you have enough RAM, but since the final goal is to project all these details on 4096 x 4096 Displacement and Normal map textures, I am sure those extra details will not show up on a 4K texture.

Proceed with adding skin pores on level six, using same technique as before. You can even



add more variety by adding individual pores in some places. It's a good idea to keep these details on a layer in ZBrush, so if you at any point feel like your surface is looking too rough,

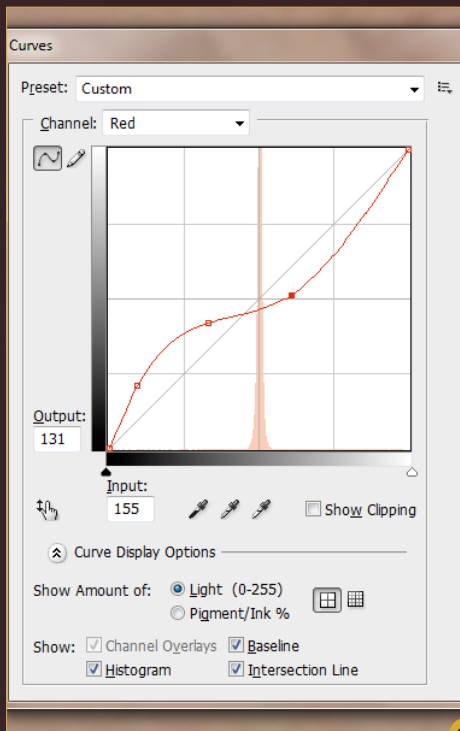
you can come back, adjust the layer opacity and generate a new Displacement or Normal map. Keep in mind that once rendered with the subsurface scattering shader, most of the high frequency details will get washed out, so don't be afraid to make those details a bit stronger than you perceive them, by looking at some photos of faces.

**Fig.05** illustrates the final detail level on the sixth subdivision.

Finally it's time to transfer all of this hard work into a Displacement and Normal map. We will use both maps as a guide for texture painting in Photoshop and we will also extract some details out of both maps and use them in a mixture with other color layers.

To generate a Displacement map, first you have to go to the first subdivision level. The next step is to choose the image size under the UV Map tab – the 4096 preset should be enough for this tutorial.





06

Go to the Displacement map tab and apply the following settings: Adaptive, Smooth UV, and DPSubPix 2. Press Create Displacement and once it's created press Clone Disp and save it from the Alpha menu as a TIF file. The generated map will be vertically flipped and you can flip it right away from the Alpha menu or in Photoshop.

Go to the Normal map tab and create normals with the following settings: Tangent, Adaptive, Smooth UV and SNormals. Export the Normal map in a similar way as the Displacement.

Generating maps with these settings can take some time to render, so it can be a great time to take a break.

Before you export the geometry too, you can use the Move brush to break up the symmetry or make some facial expressions.

Now let's move to Photoshop to draw a Color map. Open a new document, with a size of 4096 x 4096 pixels. I usually start with a big chunk of skin taken from a photographic reference. On top of that, add the Displacement map. With the displacement layer selected go to the Filter

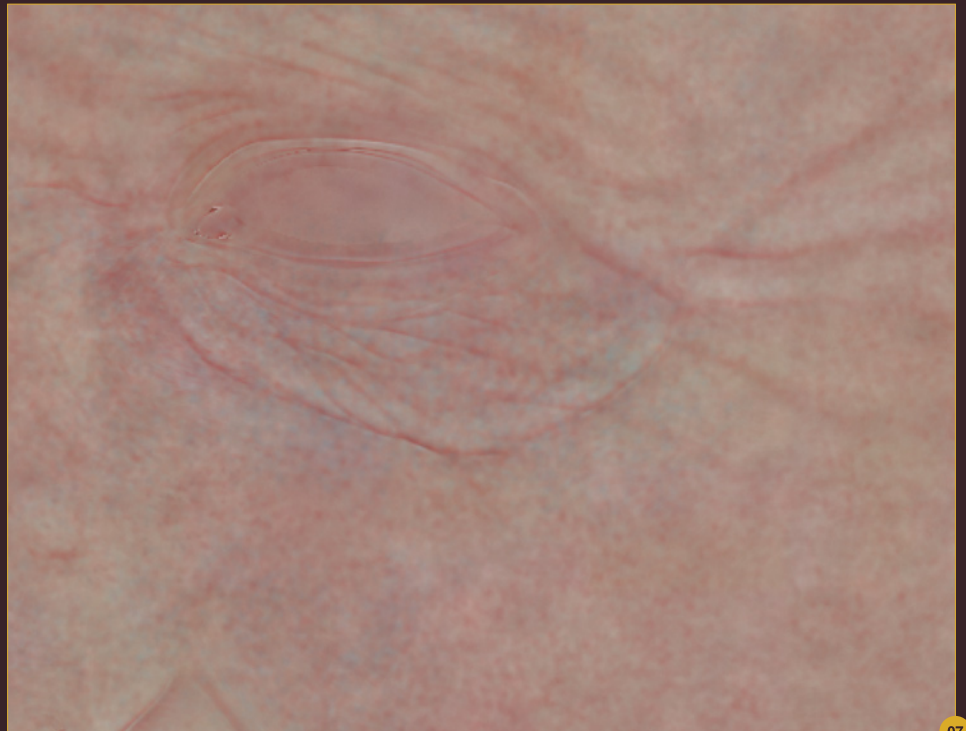
menu > Other > High Pass. Set the High Pass radius to 10 pixels.

Change the blending mode for the displacement layer to Linear Light. Now we have darkened cavities and have also laid down the road map for the rest of the texture. To make this layer blend more naturally with the skin, use Curves adjustment and change the parameters on the red channel only, as illustrated in **Fig.06**.

Let's add some fine details we are going to extract from the Normal map. Open the Normal map as a separate file, go to Channels and select the green channel only. Press Ctrl + A to select all the pixels from that channel and copy them. Now go to the texture file and paste to a new layer. Let's repeat the same process with the High Pass, but this time set the radius to 2 pixels.

Overlay this layer in Soft Light blending mode. This will be a base for a color texture, so before moving on to other layers, group these layers together.

Here is a quick setup method for making a spray color brush for adding skin variation and blemishes. Press F5 to get to the Brush Setup



07

menu and under Brush Tip Shape, choose a 5 pixels dot and adjust Spacing to 50%. Next check the Shape Dynamics and set the following parameters: Size Jitter to 100%, Minimum Diameter to 10%, Angle and Roundness Jitter to 100% and Minimum Roundness to 50%.

Now move to the Scatter options and set Scatter to 1000%, Count to 2 and Count Jitter to 50%. Once again it's time to pull out some of those gathered references and start spraying some variation over the skin.

I like to start with the red color and spray it all over the place, and later concentrate one more pass on the areas like the cheeks and nose. Repeat the same process with a white color on a separate layer. After adding some white pigmentation, open a new layer and do the same with a blue color, but more subtle and on localized areas like under the eye area, nose and cheeks.

After you finish all these color variations you can flatten the noise layers and apply a Gaussian Blur with 0,3 px radius to make it look more softened. See **Fig.07** for a small patch of the skin texture achieved this way.



08

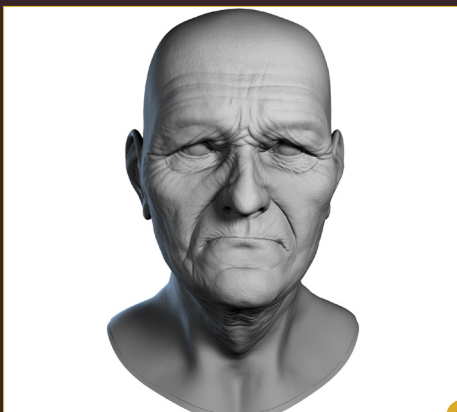
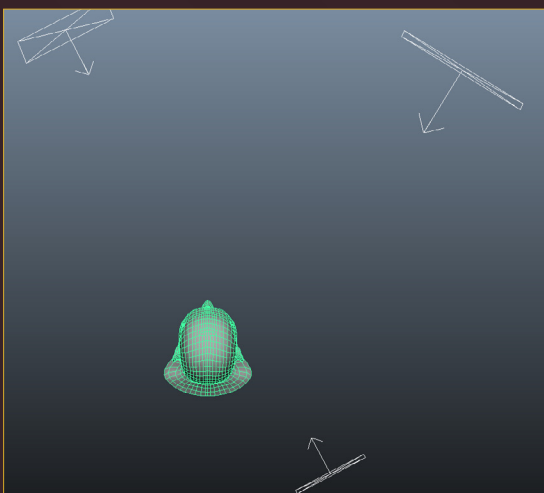
At this point it's a good idea to check the texture on the model, so go to Maya, load the model and assign a Blinn material to it. Load the Blinn material with the PSD color texture and Normal map to have a better representation of your texture in Maya's viewport. **Fig.08** shows how your model and texture should look in the Maya viewport.

Keep on coloring the texture with more color variations, skin blemishes and spots. Once you are satisfied with the result, add a color balance on top so you can control the overall skin tone.

Now we have all the necessary assets for setting up realistic skin shading in Maya using the V-Ray render and its powerful SS2 shader.

First we have to make some lighting, properly set up the Displacement map, make a new Maya scene, load a base model exported from ZBrush and apply a V-Ray material. Let's set up a three-point lighting scheme by adding three V-Ray lights: one key, one fill and one back light. Use the V-Ray rectangular light and place them as shown in **Fig.09**. To see an almost instant effect of your lighting, use the V-Ray RT engine.

To set up a displacement for the mesh, select the object, go to the Attribute Editor and from the V-Ray menu use the Subdivision option. The first thing you will notice if you make a render at this time is that the model renders smoothly.



10

Go to your Shading Group Attributes of the V-Ray material applied to the model and connect the displacement node to Displacement Mat. Load the Displacement map you earlier exported from ZBrush. In the File attributes of the loaded map, set Filter Type to Off to avoid any image processing and loss of details. Now go to the Color Balance, set the Alpha Offset to -0, 5 and check Alpha is Luminance.

Now you can make a test render. The reason I am doing this with a V-Ray material instead of a SS2 material is because subsurface scattering tends to soften details, so it would be hard to make the right decision on the displacement strength. If you feel like you should have a stronger displacement, amp the Alpha Gain number and make sure that Alpha Offset is always negative half of that number. See **Fig.10** for my result after applying displacement.

Now, when we have a proper displacement setup, let's apply the Fast SSS2 shader to the



09



11

model and drop the same displacement in the Displacement Mat. slot of this material. V-Ray Fast SSS2 is really easy to set up and it has already prepared presets for a few different subsurface models like skin, milk, marble and so on. For our purpose the skin preset will work perfectly and the first thing you should do is set the Prepass rate to 1 and load the Color map to Sub-surface Color.

You can also plug in a grayscale map to control the specular reflection and glossiness. You can also use the V-Ray Texture Input Gamma attribute. For an in-depth look at the material parameters, refer to **Fig.11**.

That would be all for this tutorial and I hope you have enjoyed it.

**ANTO JURICIC**

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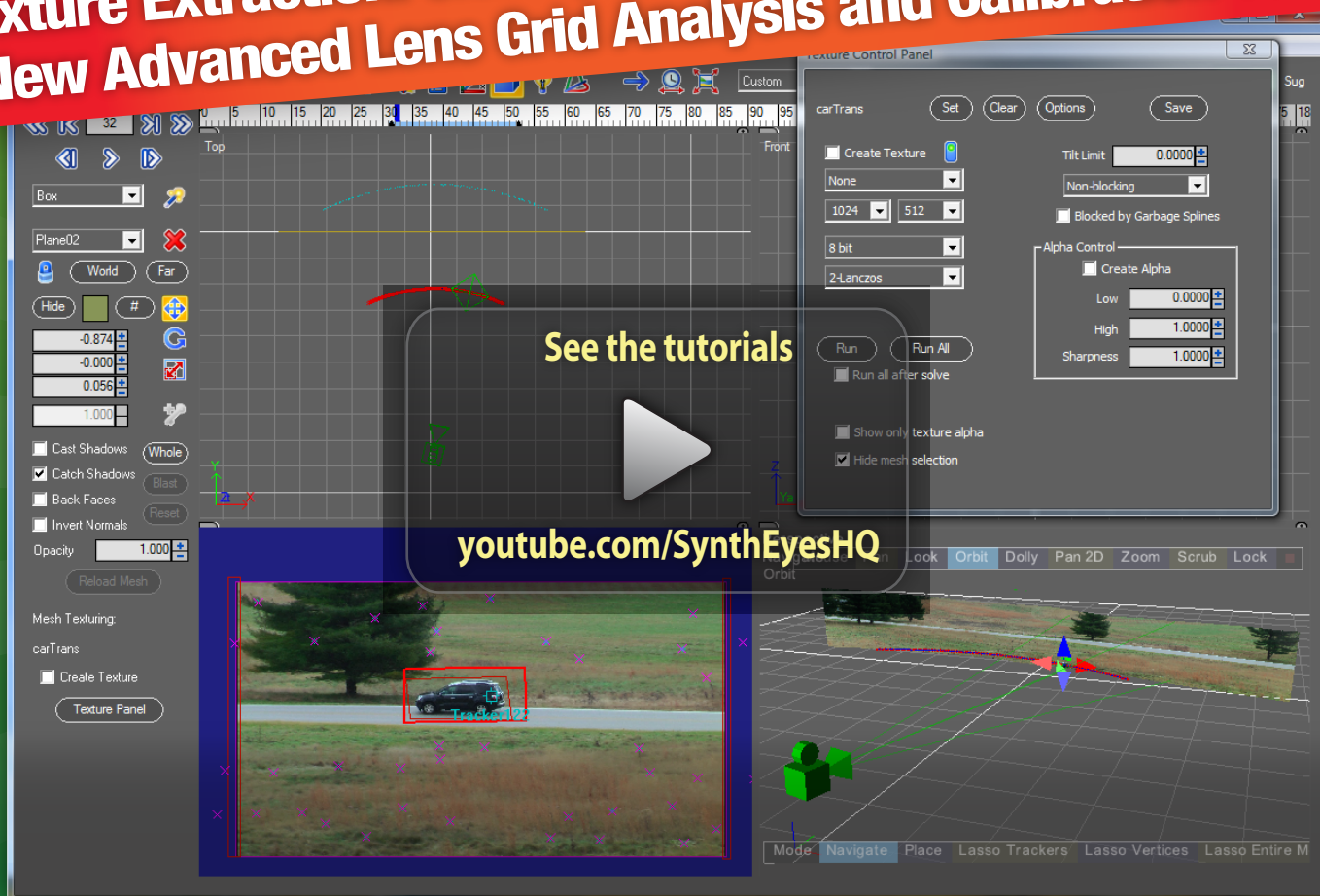
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IN A LINEAR MANNER  
(MODELING-TEXTURING-  
VISUALIZATION) IN THE  
PAST AND IT LEADS TO A  
LOT OF CORRECTIONS AND  
LOSS OF TIME"

# Baby Satyr

Making Of by  
Nikita Veprikov

Nikita's mythical images have been popping up in our galleries of late, and in this month's magazine he walks us through the process of making his 'Baby Satyr' image that you may remember from the June issues gallery. From concept to the finer details; he covers it all in this Making Of!

## BABY SATYR

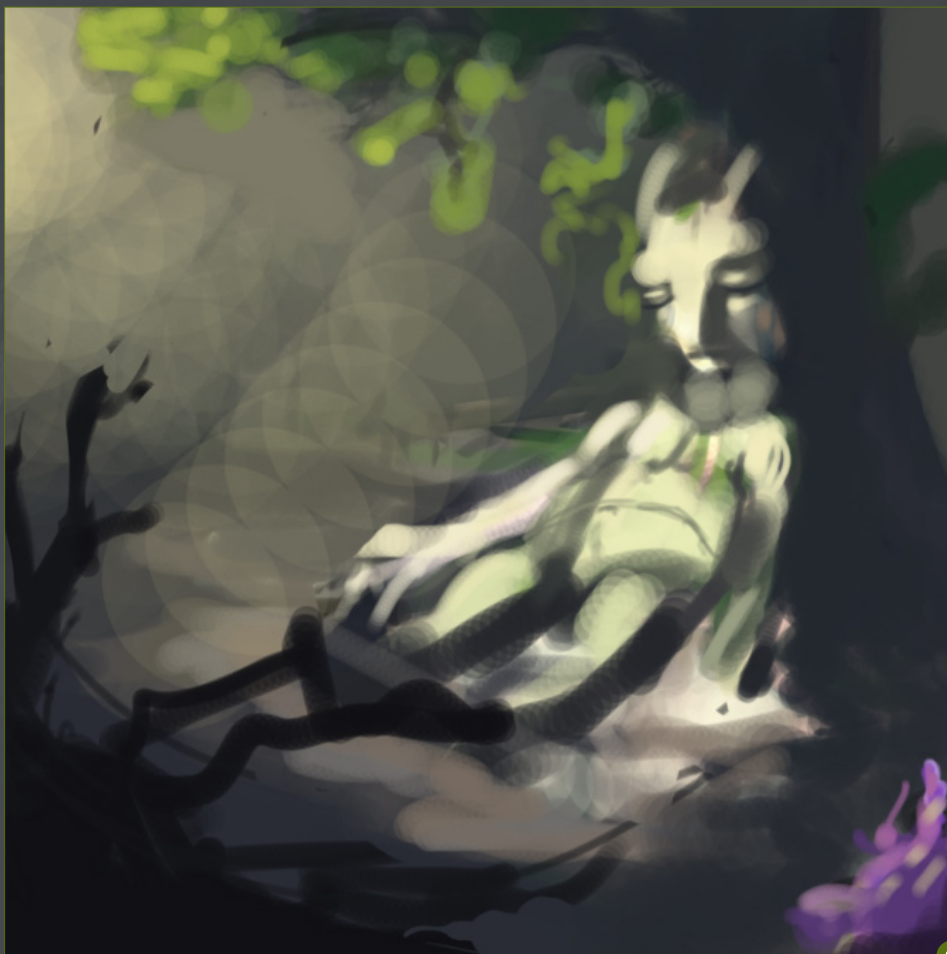
Software used: 3ds Max

Sometimes I start to work with a concept in mind; sometimes I have no idea and just start to work. In this case it was a second option. I started doodling in Photoshop with no purpose, and then some thoughts about forests, night and live trees started to occupy my mind. At some point I even figured out a tree with a face.

I then got distracted from that concept, because it looked too obvious to me and I kept searching until the idea of a sleeping baby satyr under the tree appeared. How I did that? It's just like when we stare at the clouds and see different shapes within them (**Fig.01**).

After I had a concept I made a sketch in 3D. I created very basic geometry to represent the actual objects, and tried out some different camera angles and lighting setups. At this stage I was able to deviate from the initial concept to find a more interesting execution or new idea. Also I tried to keep everything undefined for some time, because when something is done, my mind just sticks to that and it is hard to imagine that the character or scene could look another way. Distinctness locks the imagination.

On the technical side, I used V-Ray for rendering, planes in place of bushes, trees exported from OnyxTree, roots from splines



01

and the basic model of the satyr was modeled quickly in ZBrush. Poses for my characters are always done with the Transpose tool in ZBrush. The creation of a scene of this kind takes no more than few hours and saves a lot of time in the future, because you don't need to worry that much about composition and lighting when you keep going through to the final modeling and texturing (**Fig.02**).

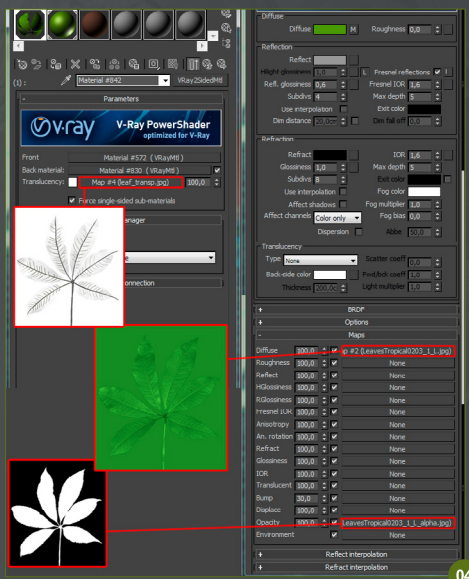
I liked everything at this stage, so let's move on. I changed the proportions of the satyr and added some details to him. The previously created splines, which symbolized roots, I converted in geometry and exported them with the tree trunk into ZBrush. After that I attached the roots to the tree trunk with retopology. I finally added details to it with standard ZBrush brushes and a few homemade alphas (**Fig.03**).



02



03



To add bushes, again I exported them from OnyxTree. I then adjusted the materials; instead of standard leaves for the tree I used planes with textures, with the Vray2SidedMtl material. In **Fig.04** you can see the actual settings of material. The front and back materials were identical.

The subdivision number for the reflections was set to 4, because there were lots of leaves in the scene and the quality of reflection on them was not crucial. These kind of small things help to save time on the render.

Vray2SidedMtl works perfectly with different thin objects that have SSS: a sheet of paper, cloth, a lamp shade, etc (**Fig.05**).

Then I cleaned up the character's pose and added more detail. The fur and grass was done with 3ds Max's Hair & Fur. Also I replaced the bushes in the foreground.

To grow fur I used a low poly version of the satyr as a hair placeholder. In the properties of this model I unchecked the Renderable checkbox in order to hide the hair placeholder from the render. Why did I use a low poly version of the character to grow the hair? Guides for hair grow from vertices of the object. So when there are lots of vertices it becomes hard to handle guides and adjust the direction of hair growth (**Fig.06**).



Two more tips for working with Hair & Fur are as follows:

- I urgently recommend turning off the checkbox Tip Fade in the Hair & Fur setting Material rollout while you're adjusting hair. Turn it on for the final render. Why do it? Tip Fade makes hair transparent towards its tip. This option make hair looks more realistic, and the overall feel of the hair is much softer, but the render time increases very badly.
- Hair & Fur's tip and root color in the Material rollout affects applied texture. So if you want

to use a texture for the hair color, change the tip and root color to white. Otherwise the applied texture will give the wrong colors.

As you can see I developed the whole image uniformly. I didn't break the whole process into defined blocks like modeling, texturing, rendering, etc. Every aspect has its influence on the others, so working this way gives you greater control over the image. I've tried to work in a linear manner (modeling-texturing-visualization) in the past and it leads to a lot of corrections and loss of time.



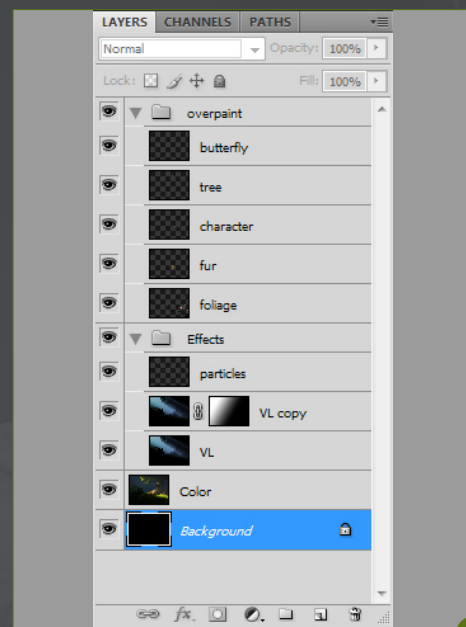
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Once the modeling was done, I adjusted the materials and lighting. In ZBrush the final scene looked like **Fig.07** and in 3ds Max it looked like **Fig.08**.

The main pass was a very simple setup: one target spot with the VrayShadow and Area Shadow checkbox on (Sphere 5cm), and GI on. Primary bounces for Global illumination was set to Irradiance map and Secondary bounces was set to Brute force. All the settings were default. To add a tiny light from the sky I changed the color of the GI Environment (skylight) override to a dark, non-saturated blue color in the V-Ray > Environment rollout.

Besides the main pass, I rendered a volume light pass. It is also easy to produce: apply a

material with a pure black color to all the objects in the scene, then go into the Environment menu Atmosphere rollout and add a volume light effect. In the settings of this effect pick the light that you want to produce the volume light. A few notes before you hit Render: the volume light effect only works with direct, spot and omni lights, and shadows of the light source should be set to Shadow Map. Once everything is in place, you can also play with the settings in the Volume light Parameter rollout to achieve different results.

How I coped with it can be seen in **Fig.09**.

The rest of the work was done in Photoshop. Now you can see what the volume light pass was rendered for. I changed its color towards a

blue hue and applied it over the image twice in Linear Dodge mode set to 43% fill. Why twice? The second one, as you can see in **Fig.10**, has a mask, therefore it effects only nearby light sources. This setup gives a feeling of a gradual lost of light.

Once I'd painted in a few more details, the image was done (**Fig.11**).

**NIKITA VEPRIKOV**

Web: <http://veprikov.com/>

Email: [veprikov.n@gmail.com](mailto:veprikov.n@gmail.com)





# 3DC next month

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Chapter 5 - Leaves and Petals falling

3ds Max & Maya

### Building Droids

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by Fábio M. Silva

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# DIGITAL ART MASTERS VOLUME 6

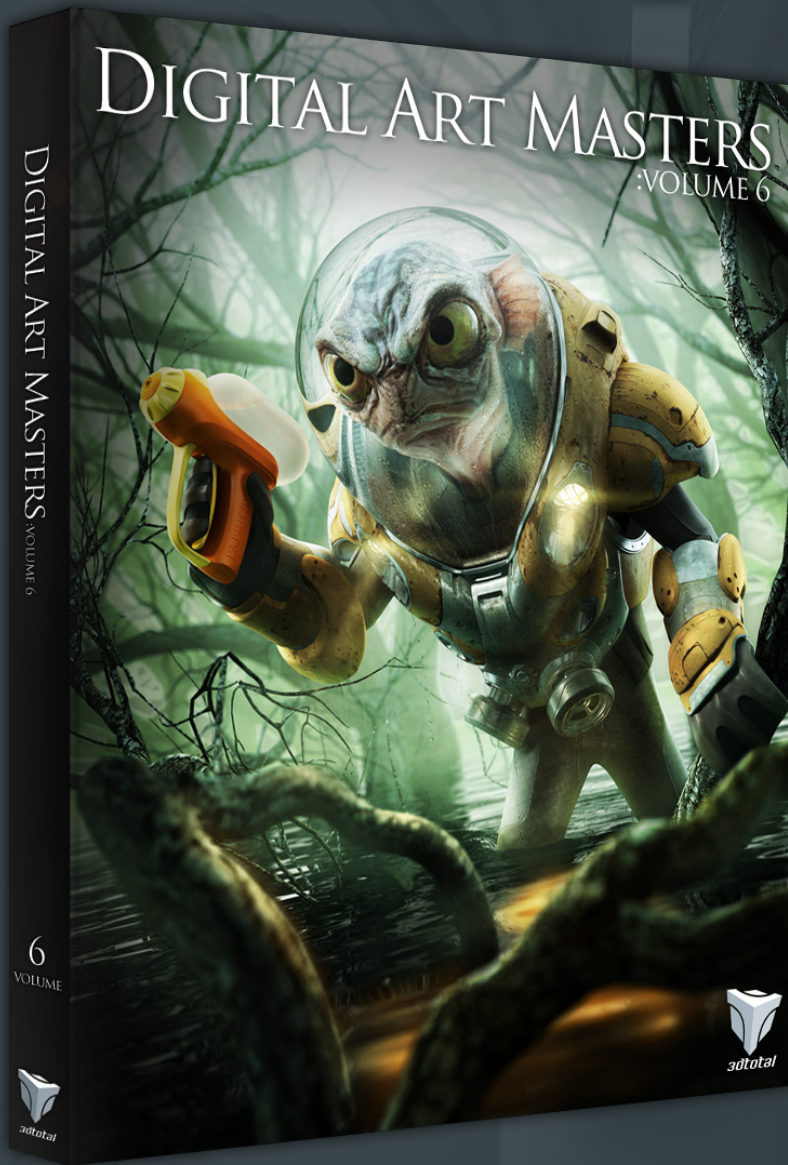
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This month we feature:

## "YOUNG PRINCESS"

BY TITOUAN OLIVE





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## YOUNG PRINCESS

BY TITOUAN OLIVE

JOB TITLE: Freelance CG Artist

SOFTWARE USED: Maya, mental ray, ZBrush, Photoshop



### INTRODUCTION

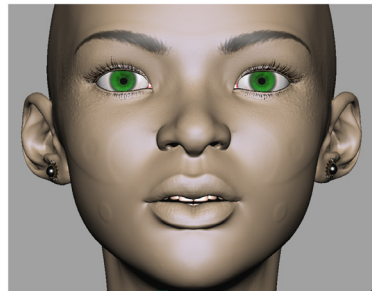
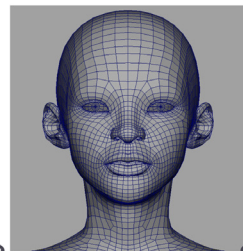
When I start a new project the first thing I do is sketch my ideas down on paper (Fig.01). I like experimenting with different ideas and it's better to do that in 2D first, since it's much faster than in 3D. I wanted to create an original young girl with an elaborate hairstyle and makeup, something colorful and detailed with some mysterious elements, aiming towards a particular and charismatic mood. I always try to create an original concept even if using obvious references for inspiration and to keep my work solid and accurate. There's no use spending too much time on this stage though since I'll develop and improve the idea along the way.

### MODELING

When I was happy with the concept I opened Maya and started by creating the base mesh. As with all my characters I kept everything as clean as possible. I am always thinking about animation and take this into consideration when I build a base mesh. I was not planning to animate this character, but if I ever wanted to it would be possible without causing any problems. As a consequence of this way of thinking I take great care over the edge loop placement. As you can see on the wire, I placed the edge loops around the mouth and the eyes (Fig.02).

"I FOCUS ALL MY ATTENTION ON THE MAIN SHAPE AND BUILD EVERYTHING FROM THIS BASE."

Another big advantage with logical edge flow is that it will help you later to make nice UVs, and the sculpting process will also be easier. Since I was going to sculpt this character in ZBrush I kept all the polygons in quads.



Once my base mesh was finished I exported it into ZBrush and started the sculpting process. Before I had done this I searched for several references on the internet and in books. When starting to sculpt I focused all my attention on the main shape and built everything from this

base. If the basic shapes are not good, the detailed model won't be good either.

With the overall shape defined I started to subdivide my model, blocking in areas like the mouth, eyes and nose. As I sculpted I also tried

TITLE OF SECTION

107

to create the feeling of there being bones and muscles under the skin. When modeling I often look at references gathered earlier and have my sketch attached just above my screen to help me as I work.

A young girl is not easy to sculpt and small changes can dramatically alter her appearance and age, which is why a few subtle tweaks can make all the difference. Proportions are also very important here. Since she's young her face is fairly clean and so the only details I added were pores, some relief on the makeup and some subtle skin imperfections. I also broke up the symmetry to create a more natural look (Fig.03).

When I was finally happy with my model, I exported the low res mesh into Maya and worked on the UVs. This part can be a bit boring, but is nevertheless important which is why I always take care to unwrap it in order to produce clean UVs with as little distortion as possible. When it was done, I then went back to ZBrush and imported the low res mesh with clean UVs. The base meshes for the clothes and skull pendant were done in Maya and then imported into ZBrush to be sculpted (Fig.04).

The crown was done entirely in Maya using hard modeling techniques as sculpting would not add anything here. The other elements were created in the same way (Fig.05).

### TEXTURING

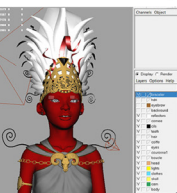
I started the texturing process in ZBrush, using Poly-painting, by trying to find a good skin tone and block in the main colors. When



the moment came to ramp up the details I transferred the color information into a texture and continued in Photoshop, adding the finer details. All the textures are hand-painted using this same method (Fig.06).

### RENDERING

For the rendering I first positioned my lights and carried out some render tests without any



"THE EYES ARE A VERY IMPORTANT AND PARTICULAR PART OF THE FACE. THEY CAN EXPRESS MANY THINGS, AND ARE AN ASPECT THAT REQUIRES ATTENTION AND MUST NOT BE NEGLECTED"

textures. This helps you to see the impact of each light on the model. When I was happy with the lighting I added my textures and tweaked the shaders (Fig.07).

It was during this stage that I noticed some of the textures needed to be tweaked (too much or not enough specular on some areas for example) and consequently I made some final adjustments in Photoshop, alongside the addition of some finer details.

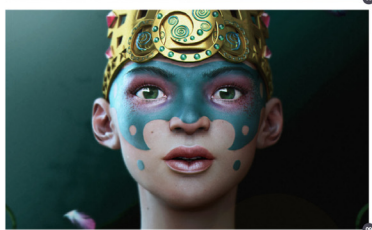
108

TITLE OF SECTION

The eyes are a very important and particular part of the face. They can express many things, and are an aspect that requires attention and must not be neglected (Fig.08).

Once happy with the final look I rendered out several passes in high res and composited them in Photoshop, in order to have more control over particular areas and develop the final image. I kept the background simple since all the attention needed to be focused on the character (Fig.09). I finished by making some color corrections and adding some blur and soft noise, which concludes this article.

As an afterthought, and if I had to offer some advice, I would say always think before you create a character. Think about originality even when you create something that has already been explored by many other artists before you. Try to keep a style (yours) and try to add something unique to your work. Look at things with an artistic eye and also rely on your imagination. Keep your mind alert and always remaining open to experimentation. I believe this will always make a difference.



### ARTIST PORTFOLIO



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109

# DIGITAL ART MASTERS

: VOLUME 6



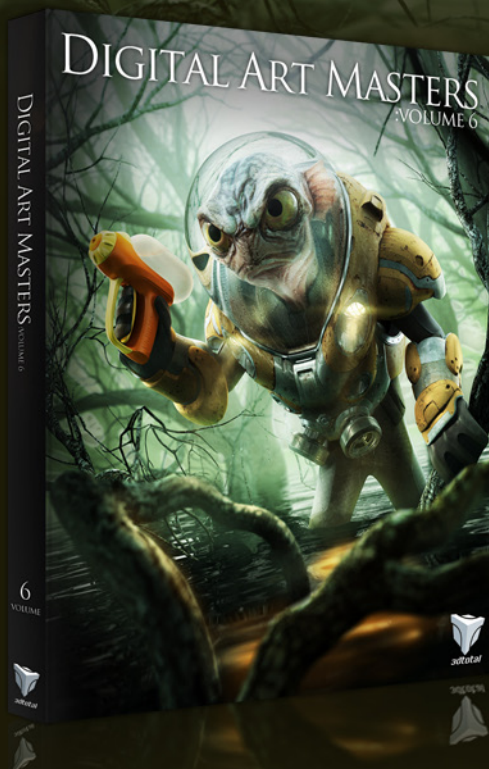
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# 2d artist

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Cover Image by Patipat Asavasena

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#### Painting Creatures from Mythology

**Ignacio Bazan Lazcano** and **Simon Dominic** serve up the catch of the day as they bring us two differing versions of the Cipactli.

#### Dreamscape

The dream is over, as **Jama Jurabaev** brings his fantastic Dreamscape series to a close, finalizing his short movie.

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Is a resource website for the CG community; amongst our growing number of products for CG artists, we produce two monthly downloadable PDF magazines – 2DArtist and 3DCreative.

We are based in the West Midlands, in the UK, and our intention with our magazines is to make each issue as full of great articles, images, interviews and tutorials as possible. If you would like more information on 3DTotal or our magazines, or if you have a question for one of our team, please use the links below.

### CONTACT INFORMATION

<http://www.3dtotal.com>

<http://www.3dcreativemag.com>

<http://www.2dartistmag.com>

Editor & Content Manager > Simon Morse

[simon@3dtotal.com](mailto:simon@3dtotal.com)

Lead Designer > Chris Perrins

[chrisp@3dtotal.com](mailto:chrisp@3dtotal.com)

Marketing > Tom Greenway

[tomg@3dtotal.com](mailto:tomg@3dtotal.com)

### PARTNERS

If you have a CG community website and would like to support 3DCreative and/or 2DArtist magazine by showing our banners, contact Simon Morse at the email address above.

